

Proposed Mitigated Negative Declaration

Miner Slough Levee Repair

Lead Agency: California Department of Water Resources (DWR), 3500 Industrial Blvd., West Sacramento 95691

Availability of Documents

The Initial Study for this Proposed Mitigated Negative Declaration is available for review for 30 days from February 24, 2014. Questions or comments should be submitted no later than 5 P.M. on March 26, 2014 to:

Department of Water Resources (DWR)
Division of Environmental Services
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The document is available for review at the following locations:

- DWR, 3500 Industrial Blvd., West Sacramento, CA 95691
- Online at <http://www.water.ca.gov/newsroom>
- Solano County Clerk/Recorder Office, 675 Texas Street, Suite 2700, Fairfield, CA 94533-6338

Project Location

The project is located along the west bank of Miner Slough, which is the eastern edge of Prospect Island, in Solano County. The project is located within the Liberty Island Quadrangle, Township 5 North, Range 3 East, M.D.M., between 38°15'10"N to 38°17'10"N latitude and 121°38'10"W to 121°39'30"W longitude.

Project Description

DWR proposes to repair the Miner Slough levee from approximate river miles 1.8 to 5. The levee repair will be completed from a barge within Miner Slough with assistance from equipment, most likely an excavator, on the levee crown. DWR proposes to repair the levee by placing a rock slope protection and soil mix to reshape the area to the original levee slope. The work will be done in a manner that will not change the character, scope, or size of the original levee and will not result in expanding the existing use of the levee. Seeding and replanting with native seed and trees will follow up the repair work. The work will take place from August 1 to November 30.

The conceptual sequence and method of the repair work is as follows: (1) remove some vegetation from the levee crest and waterside slope, (2) chip vegetation and leave at location designated by DWR, (3) excavate the upslope material to uncover beaver dens, (4) collapse any bridged rock, beaver dens, or holes in the failure area, (5) place rock slope protection in the water on existing rock to fill in holes and form benches, (6) place rock and soil layers above the water to fill the failure volume, and (7) hydroseed the slopes with native seed and replant native trees above water.

Findings

The Initial Study has been prepared to determine if the project could have a significant effect on the environment. Based on the Initial Study, it has been determined that the proposed project would not have any significant effects on the environment after implementation of mitigation measures. The mitigation measures identified in the Initial Study and a Mitigation Monitoring and Reporting Plan will be adopted to ensure compliance with the required mitigation measures. This conclusion is supported by the following findings:

- The project would result in no impacts to agricultural resources, geology, soils, land use, utilities and service systems, mineral resources, recreation, noise, population and housing, and traffic and circulation.

- The project would result in less-than-significant impacts to air quality, aesthetics, hazards and hazardous materials, greenhouse gas emissions, and public services.
- With implementation of mitigation measures, the proposed project would have less-than-significant impacts on biological resources, cultural resources, and hydrology/water quality.

Mitigation Measures

The following mitigation measures will be implemented by DWR to avoid or minimize potential environmental impacts. Implementation of these mitigation measures would reduce the potential environmental impacts of the proposed project to a less-than-significant level.

Mitigation Measures for Biological Resources

General Mitigation Measures

BIO 1: Pre-construction Survey. Pre-construction surveys for protected species will be performed no more than 48 hours prior to the mobilization of equipment to the site.

A pre-construction survey for Western Pond Turtles will be conducted immediately prior to construction. If a Western Pond Turtle is identified within the work zone, work will not proceed until the turtle has moved, on its own, out of the work zone.

Pre-construction surveys will be conducted prior to mobilization to the site by a qualified biologist for the presence of Giant Gartersnakes (GGS) and their habitat. The biologist will inspect construction-related activities within the project area to assure that mitigation measures are being performed as required. The project area shall be re-inspected by a qualified biologist whenever a lapse in construction activity of 2 weeks or greater has occurred. If GGS are encountered during construction activities, the biologist will notify the USFWS immediately to determine the appropriate procedures related to the collection and relocation of the snake. A report will be submitted, including date(s), location(s), habitat description, and any corrective measures taken to protect the snake, within one (1) business day. The biologist will be required to report any take of listed species to the USFWS immediately by telephone and by electronic mail or written letter within one (1) working day of the incident.

BIO 2: Protection of Listed Species. If DWR encounters a fully protected or listed animal species while performing work, DWR shall suspend all work until the fully protected or listed animal species has left the work area. DWR shall notify the appropriate agencies of all confirmed observations of any fully protected or listed species in or adjacent to any work area covered by this Agreement.

BIO 3: Environmental Awareness Training. A Worker Environmental Awareness Training Program for construction personnel shall be conducted by a qualified biologist for all construction workers, including sub-contractors, prior to the commencement of construction activities. The program shall consist of a presentation made by a qualified biologist that includes information about the distribution and habitat needs of any special status species that may be present, legal protections for those species, penalties for violations and project-specific protective measures included in this document.

BIO 4: Biological Monitor. A biological monitor will be available as necessary to monitor construction activities. DWR will follow all conditions required by USFWS during consultation for ESA as well as other resource agency recommendations.

BIO 5: Post-construction Restoration. After completion of construction activities, the applicant will remove any temporary fill and construction debris and, wherever feasible, restore disturbed areas to pre-project conditions. Habitat restoration work will include planting cuttings or saplings of native trees to replace those that are removed, and hydroseeding with native grasses and forbs to reduce erosion.

Mitigation Measures for Valley Elderberry Longhorn Beetle

BIO 7: Fencing of Elderberry Shrubs. Fencing and/or flagging will be used to identify exclusion areas around elderberry shrubs that will be avoided by construction personnel and equipment.

Mitigation Measures for Fish

BIO 8: In-water Work Windows. In-water work will be completed between August 1 through November 30, designated by CDFW as a time period when Delta Smelt, winter-run Chinook Salmon, and spring-run Chinook Salmon are least vulnerable to impacts from in-channel activities (USFWS 2004, DFG 2005a).

BIO 9: Minimization of Turbidity. Work will occur below the mean high water mark. Rock material used for levee repairs shall be clean, hard, rock with no appreciable fines and will be placed below the water line in a manner that limits resuspension of sediments. Turbidity measurements will be taken in accordance with the project's CWA 401 Water Quality Certification. If needed, rock placement methods will be modified, slowed, or suspended in order to comply with the terms and conditions of the Certification.

Mitigation Measures for Giant Gartersnake

BIO 10: Active Season Work Window. Construction and ground disturbing activities will be initiated within the snake's active season of May 1 through October 1; however, the applicant is proposing to continue work into the snake's inactive season. Work will be initiated prior to September 15, and ongoing activities are likely to deter snakes from using locations within the project area as brumation sites. Brumation can be loosely equated to hibernation among mammals. All earth-disturbing project activities are expected to be completed no later than November 30.

BIO 11: Vehicle Speeds. Project-related vehicles will observe a 20-mile-per-hour speed limit within construction areas, except on existing paved roads where they will adhere to the posted speed limits.

BIO 12: Erosion and Sedimentation. Best Management Practices (BMPs) will be implemented to minimize the potential for erosion and sedimentation into nearby water bodies.

Mitigation Measures for Mammals

BIO 13. If pre-construction surveys find natal roost sites for bats within the work area, DWR shall avoid any work between March 1 and August 15 at specific sites if such work could disturb potential roosting sites for bats. Trees to be removed will be limited to the minimum extent feasible to make levee repairs. Mitigation measures will be established and implemented in coordination with CDFW to avoid impacts to habitat. Mitigation measures may include, but are not limited to, pre-construction surveys by a qualified biologist to determine potential for roosting bats, avoidance of tree removal during the non-volant period to avoid impacts to lactating females and young bats that are unable to fly on their own, and implementation of a staged disturbance strategy to allow roosting bats opportunity to move before a potential roost site is removed.

Mitigation Measures for Birds

BIO 14. If construction takes place during the active nesting season (April 1 through August 31), a qualified biologist will conduct preconstruction surveys prior to the start of construction to locate all active migratory bird nests within 250 feet, active raptor nests within 500 feet and all active Swainson's Hawk nests within ¼ mile of construction areas. If nests are located, impacts shall be minimized by establishing appropriate non-disturbance buffer zones in consultation with DFW and monitoring nests to ensure that nests are not jeopardized.

BIO 15. If Swainson's Hawks are found nesting within ¼ mile of the proposed project, a qualified biologist will conduct a risk assessment and consult CDFW to develop and implement appropriate avoidance and minimization measures. This may include monitoring of nests by a qualified biologist and suspension of work if Swainson's Hawk nests are at risk of disturbance.

Mitigation Measures for Plants

BIO 16. A botanist will conduct pre-construction surveys for rare plants prior to construction activities. If any are identified, DWR scientists will flag the areas. Plants will be avoided as much as possible. Those plants that may be impacted by project activities will be moved to an alternate site along the levee.

Mitigation Measures for Trees

BIO 17. All trees within the construction easement that are greater than 4 inches diameter at breast height (DBH) shall be retained to the greatest extent practicable. Tree removal shall be limited to situations where access, required equipment maneuverability, worker/public safety, and levee integrity are not reasonably possible without removal of

trees. Trees that are removed for project activities will be chipped and materials will be placed in upland locations along the levee for future use onsite by DWR.

BIO 18. All trees that are to be retained and that occur within the footprint of the repairs shall be trimmed of any branches that would interfere with installation of protective materials (e.g., burlap).

BIO 19. All trees that are to be retained within the footprint of the repairs shall be protected by wrapping the trunks with protective materials (e.g., burlap and wood) prior to placement of revetment. Tree protection measures shall be clearly illustrated in the construction plans.

BIO 20. Construction staging and operation of vehicles/heavy equipment within the drip line of native trees that are located outside of the repair footprints shall be avoided to the greatest extent practicable.

BIO 21. Trees 4" DBH or larger to be removed shall be replaced at a 3:1 ratio at mitigation sites along the Miner Slough levee at a site at the discretion of DWR. DWR will comply with the CDFW Streambed Alteration Agreement for tree mitigation.

Mitigation Measures for Cultural Resources

CUL 1. If the potential historically significant shipwreck that was recorded in Miner Slough is found within the project area, an area of exclusion will be created around the shipwreck(s) so that it will not be impacted by project activities. The exclusion area will be marked on a navigation chart and given to the barge operator so the construction and staging barges will not float or work over the exclusion area.

CUL 2. If historical or unique archaeological resources are incidentally discovered during construction, provisions will be made for a qualified archaeologist to immediately evaluate the find. Work may continue on other parts of the project while evaluation and mitigation takes place (CEQA Guidelines §15064.5 [f]). If the find is determined to be an historical or unique archaeological resource, time allotment sufficient to allow for implementation of avoidance measures or appropriate mitigation must be available.

CUL 3. If human remains are found, such remains are subject to the provisions of California Public Resources Health and Safety Code Section 7050.5-7055. The requirements and procedures would be implemented, including immediately stopping work in the vicinity of the find and notification of the County Coroner. The process for notification of the California Native American Heritage Commission (NAHC) and consultation with the individual(s) identified by the NAHC as the "most likely descendent" is set forth in Section 5097.98 of the California Public Resources Code. Work can restart after the remains have been investigated and appropriate recommendations have been made for the treatment and disposition of the remains.

Mitigation Measures for Hazards and Hazardous Materials

HAZ 1. During construction activities, contractor shall prevent oil, grease, fuels, and other petroleum products, toxic chemicals, and any other substances that could be deleterious to aquatic life from contaminating the soil and/or entering waters of the state. The contractor shall immediately remove such substances from any place where they could enter waters of the state and/or adversely affect fish and wildlife resources. The contractor shall attempt to contain any releases or spills of such substances, and shall report any significant spills as soon as possible to the California Emergency Management Agency (Cal-EMA). In the event of a significant spill, work will cease immediately and workers will employ containment methods if it is safe to do so. DWR will make notifications to the appropriate agencies within the regulatory time frames.

HAZ 2. No materials will be staged or stored on the work site in excess of one work day. Stationary equipment such as motors, pumps, generators, compressors, and welders located within or adjacent to a water body shall be positioned over drip-pans.

HAZ 3. All personnel dispensing fuels or servicing vehicles on site will be instructed in the proper use of absorbent materials, spill containment, and waste disposal.

Mitigation Measures for Hydrology/Water Quality

WQ 1. The rock material used for levee repair shall be clean, sound, hard, angular fragments of rock with no appreciable fines, and shall be free of cracks, seams, or other defects.

WQ 2. Construction BMPs shall be implemented for all phases of the project to protect against erosion. All exposed soils within the work area shall be stabilized immediately following the completion of earthmoving activities to prevent erosion into the stream channel or wetland/riparian areas.

WQ 3. Equipment will be inspected daily prior to use for leaks and greases. All leaking equipment will be repaired prior to use. Workers will be trained in the proper use of absorbent materials, spill containment, and waste disposal.

WQ 4. To minimize impacts from water runoff, erosion and other potential water quality impacts, best management practices will be employed as described in an approved SWPPP for this project.

Mitigation Measures for Transportation/Traffic

TRAF 1. All U.S. Coast Guard lighting requirements will be followed (CCR Title 33 §88.13). The barge must display warnings for underwater anchors so that other boaters are aware of the potential danger beneath the water in compliance with U.S. Coast Guard regulations. The anchored barge(s) will be well-marked and positioned so as not to pose a hazard to, nor significantly impede navigation of, commercial or recreational navigation.

TRAF 2. If emergency assistance is required during construction, staff will be dispatched to meet emergency vehicles at the gate and will escort the emergency vehicles to the accident site.

Permits

The proposed activities will require the following permits and authorizations:

- California Fish and Game Code section 1600, Streambed Alteration Agreement and Verification Request Form for Routine Maintenance Agreement Activities (1600-2011-0210-R3)
- Regional Water Quality Control Board Clean Water Act section 401 Water Quality Certification
- Central Valley Flood Protection Board encroachment permit
- U.S. Army Corps of Engineers, section 404 of the Clean Water Act and section 10 of the Rivers and Harbors Act, Nationwide Permit 3
- U.S. Fish and Wildlife Service (USFWS), Letter of Concurrence for federal species under the Endangered Species Act under their jurisdiction
- National Oceanic and Atmospheric Agency Fisheries Unit, Letter of Concurrence for federal species under the Endangered Species Act under their jurisdiction
- State Lands Commission, Letter of Concurrence for Use of State Lands

Determination

In accordance with section 21082.1 of the California Environmental Quality Act, DWR has independently reviewed and analyzed the Initial Study and proposed Mitigated Negative Declaration for the proposed project. The Initial Study and proposed Mitigated Negative Declaration reflect the independent judgment of DWR. DWR has determined that adoption of a Mitigated Negative Declaration is appropriate and that the preparation of an Environmental Impact Report (EIR) will not be required. DWR will adopt a Mitigation Monitoring and Reporting Plan to ensure compliance with the required mitigation measures for the proposed project. With implementation of these mitigation measures, the proposed project would have no significant effect on the environment.

Dean F. Messer, Chief
Division of Environmental Services

Date

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INITIAL STUDY
MINER SLOUGH LEVEE REPAIR PROJECT



LEAD AGENCY:

DEPARTMENT OF WATER RESOURCES
DIVISION OF ENVIRONMENTAL SERVICES
MITIGATION AND RESTORATION BRANCH

FEBRUARY 2014

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Acronyms and Abbreviations

AB	Assembly Bill	IEP	Interagency Ecological Program
APE	Area of Potential Effect	IS/MND	Initial Study/Mitigated Negative Declaration
CALFED	CALFED Bay-Delta Program	LOS	Level of Service
CCR	California Code of Regulations	m-Hg	Monomethylmercury
CDFG	California Department of Fish and Game	MBTA	Migratory Bird Treaty Act
CDFW	California Department of Fish and Wildlife	Me-Hg	Methylmercury
CDOC	California Department of Conservation	mm	millimeter
CEQA	California Environmental Quality Act	NMFS	National Marine Fisheries Service
CESA	California Endangered Species Act	NO ₂	Nitrogen Oxides
CFGC	California Fish and Game Code	NOAA	National Oceanographic and Atmospheric Administration
CNDDDB	California Natural Diversity Database	NOx	Nitrogen Oxides
CNPS	California Native Plant Society	Pm ₁₀	Coarse Particulate Matter
CO	Carbon Monoxide	PM _{2.5}	Fine Particulate Matter
CVRWQCB	Central Valley Regional Water Quality Control Board	ppt	parts per thousand
DBH	Diameter at breast height	ROG	Reactive Organic Gases
DMCP	Delta Mercury Control Program	RWQCB	Regional Water Quality Control Board
DO	Dissolved Oxygen	SLC	State Lands Commission
DWR	Department of Water Resources	SO ₂	Sulfur Dioxide
EFH	Essential Fish Habitat	SR	State Route
EIR	Environmental Impact Report	SWA	State Wildlife Area
EPA	Environmental Protection Agency	SWP	State Water Project
ESA	Endangered Species Act	TMDL	Total Maximum Daily Load
ESU	Evolutionary Significant Unit	URBEMIS	Urban Emissions (Software)
USFWS	United States Fish and Wildlife Service	USGS	U.S. Geological Survey
GGERP	Greenhouse Gas Emissions Reduction Program	VELB	Valley Elderberry Longhorn Beetle
GGS	Giant Gartersnake	YSAQMD	Yolo-Solano Air Quality Management District
GHG	Greenhouse Gas		

Chapter 1 – Introduction

Background

This document is an Initial Study (IS) that provides an analysis of the Miner Slough Levee Repair Project. This document has been prepared in accordance with California Environmental Quality Act (CEQA), Public Resources Code §21000 et seq., and the State CEQA Guidelines, Title 14 California Code of Regulations (CCR) Section 15000 et seq.

The purpose of this Initial Study is to: (1) determine whether project implementation would result in potentially significant or significant effects to the environment, and (2) incorporate mitigation measures into the project design, as necessary, to eliminate the project's potentially significant or significant project effects or reduce them to a less-than-significant level.

Department of Water Resources (DWR) requested a levee inspection to be performed by MBK Engineers in April 2013 (MBK Engineers 2013). The resulting report identified deficiencies to the levee prism including encroachments, rodent activity/holes, erosion, sloughing, low spots, steep levee slopes, undercut banks, and cracking. The report indicated that the deficiencies could lead to failure of a levee or major damage during the next high water event, and therefore repairs are needed urgently.

Lead Agency

As specified in CEQA Guidelines Section 15367, the lead agency for CEQA compliance is the public agency that has the principal responsibility for carrying out or approving the project. DWR has principal responsibility for carrying out the proposed project and is therefore the CEQA lead agency for this Initial Study.

Supporting Environmental Studies

Environmental studies conducted for the project include: 1) a waters of the United States delineation report, 2) a biological assessment for fisheries (NOAA Fisheries jurisdiction), 3) a biological assessment for other species (USFWS jurisdiction), and 4) an archaeological survey report and historic properties evaluation report. With the exception of the confidential archaeological survey report, these environmental reports are available upon request during normal operating hours at DWR, Division of Environmental Services, 3500 Industrial Blvd., West Sacramento, CA 95691 or by contacting Michelle Phillips at michelle.phillips@water.ca.gov, 916-376-9849.

Chapter 2 Project Description

Project Location

The project is located along the west bank of Miner Slough, which is the eastern levee of Prospect Island, in Solano County (Figures 1 and 2). The project site lies in the northwest reach of the Sacramento-San Joaquin River Delta (Delta). The project is located within the Liberty Island Quadrangle, Township 5 North, Range 3 East, M.D.M., between 38°15'10"N to 38°17'10"N latitude and 121°38'10"W to 121°39'30"W longitude.

Project Need and Objective

As discussed in Chapter 1, a levee inspection report identified deficiencies in the levee prism including encroachments, rodent activity/holes, erosion, sloughing, low spots, steep levee slopes, undercut banks, and cracking (MBK Engineers 2013). The objective of the project is to repair the levee with a combination of rock slope protection and soil. The work will be done in a manner that will not change the character, scope, or size of the original levee design and will not result in expanding the existing use of the levee.

Project Description

DWR proposes to repair the Miner Slough levee from approximate river miles 1.8 to 5. The levee repair will be completed from a barge within Miner Slough with assistance from equipment, most likely an excavator, on the levee crown. DWR proposes to repair the levee by placing a rock slope protection and soil mix to reshape the area to the original levee slope. Replanting with native seed and trees will follow up the repair work. The work will take place from August 1 to November 30.

The conceptual sequence and method of the repair work is as follows: (1) remove obstructing vegetation from the levee crest and waterside slope, (2) chip vegetation and stockpile or spread at an upland location designated by DWR, (3) excavate the upslope material to uncover beaver dens, (4) collapse any bridged rock, beaver dens, or holes in the failure area, (5) place rock slope protection in the water on existing rock to fill in holes and form benches, (6) place rock and soil layers above the water to fill the failure volume, and (7) hydroseed the slopes with native seed and replant native trees above water.

Site Preparation

To prepare for the placement of rock slope protection, up to 20 trees will be removed from the levee to allow inspections of the levee slopes to determine the exact locations and sizes of the failures. Tree removal will be coordinated with the California Department of Fish and Wildlife (CDFW). The removed vegetation will be chipped and placed on an upland area on the landside of the levee. Cuttings may be retained for planting after the rock slope protection and soil are placed.

Preparation of Slope

One of the most important details of slope repair is preparation of the levee slopes. The existing slopes are quite steep and rock slope protection is very difficult to place on slopes steeper than 1.5:1 (horizontal to vertical). Therefore rock slope protection will be imported and placed in the water on top of existing rock to fill in holes and form a bench at the levee toe. The bench will support placement of additional rock slope protection and soil above the water level and prevent the rock slope protection and soil from falling into the water.

Beaver tunnels and dens can provide a path for water to penetrate through a levee. Once the beaver tunnel passes the top of the levee, the tunnel then can allow water to pass through the levee section. Most beaver den excavations will require repair of the waterside slope. Therefore, the tunnels and dens need to be excavated, filled, and compacted. Beaver tunnels typically start underwater and run perpendicular to the levee centerline. Excavation of a beaver den may start by digging a trench parallel to the levee centerline along the waterside edge of the levee or at the top of the failure. If there are beaver tunnels and the area where the tunnel penetrates the levee section can be seen, the equipment operator then follows the tunnel through the levee.

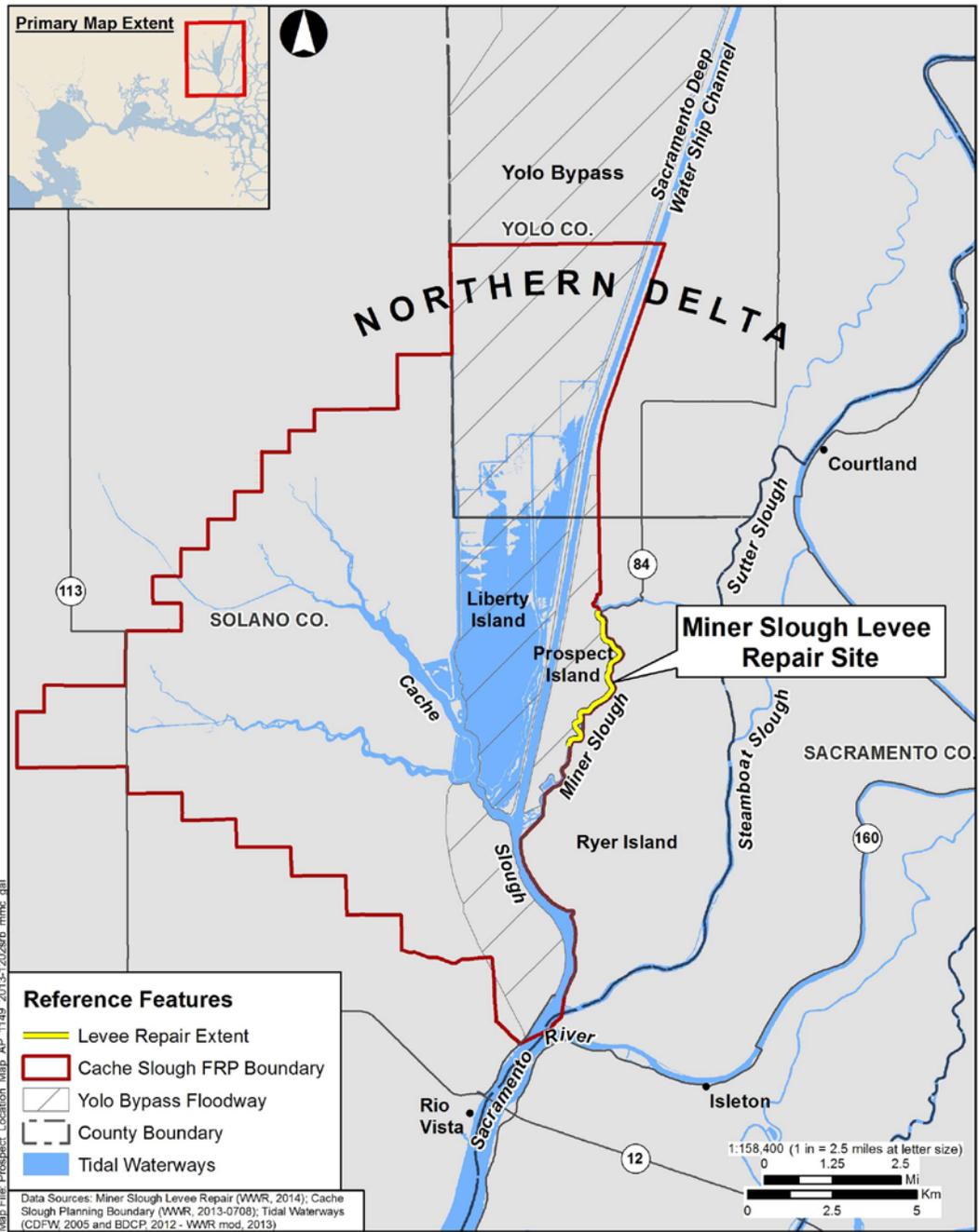


Figure 1. Location of Prospect Island

Place Rock Slope Protection and Soil Fill

Fill material and rock slope protection will be brought to the sites by barge. There is only a one-lane narrow road along the levee bordering Miner Slough where the repairs are needed and therefore delivery of the rock slope protection and soil would be difficult using trucks. Miner Slough is wide enough to accommodate barges and there is access from the Antioch area. Tug boats will deliver the barges (approximately 30 feet wide and 80 feet long), which will be held in place with “spuds” (temporary steel piles that are pushed into the channel bottom) at the work site. The barges will be positioned parallel and as close as possible to the levee bank to facilitate offloading materials and to avoid blocking the river channel.

There will not be a designated stockpile area as rock and soil material will be transferred directly from the barge to the levee using a barge mounted dragline. A barge mounted dragline will use a special bucket to remove rock slope protection and soil from the barges. The dragline will then extend over the levee slope to deposit the materials on the levee in the locations directed. Final placement of rock slope protection and soil may be done with an excavator operating on the levee.

Proposed Equipment

1. An excavator to move rock and soil.
2. Barges with dragline to transport and offload rock and soil.
3. Chipper(s) and chain saws for tree removal.
4. Work truck to collect chippings and move the chipper (chipper is not self-propelled).
5. A mini excavator or engine driven auger for planting.
6. Supervisor truck.
7. Service truck to service and fuel equipment.
8. Delivery trucks to deliver plants and materials.
9. A hydroseeder truck for hydroseeding and blowing tackifier and mulch over the seeded areas.
10. A straw grinder/blower to apply straw over the seeded areas.

The contractor will have a service truck that will service the equipment on the levee. The service truck will stay on the levee crest road. Refueling will be done along the levee road. All parts of the project are within 100 feet of the water, therefore, best management practices (BMPs) will be in place to prevent fuel from entering water. See the following pages for a complete list of BMPs and mitigation measures.

Environmental Setting

Existing Conditions

The project area is located along the channel of Miner Slough (approximate river mile 1.8 to 5), a tidally influenced stream, with fairly steep sloping levees. The levee has been engineered with rock slope protection, but is also lined with riparian vegetation dominated by common species such as boxelder (*Acer negundo*), white alder (*Alnus rhombifolia*), sandbar willow (*Salix exigua*), black locust (*Robinia pseudoacacia*), Himalayan blackberry (*Rubus armeniacus*), and California wild grape (*Vitis californica*).

The project location is within the legal Delta boundary of the Sacramento San Joaquin Delta. It lies within the southwestern Sacramento Valley subregion of the Great Central Valley of the California Floristic Province (Hickman 2012). The elevation is approximately 20 feet above mean sea level and the topography is generally a naturally flat valley bottom. The climate of the project location is characterized by hot, dry summers and cool, moist winters. The average annual precipitation is 36 inches (NOAA 2013). In most years either less than or more than average precipitation falls (i.e., like much of California the area is frequently subject to either wet, flood-prone or dry years that can lead to drought). When substantial rain does fall in the area, it occurs most commonly from November to March (CDFW 2013a).

The proposed activities are located near the center of California’s Central Valley, which is drained by the Sacramento River from the north, the American River from the east, and the San Joaquin River from the south. Miner Slough drains into the Cache Slough.

Chapter 3 – Environmental Setting, Impacts and Mitigation

Environmental Factors Potential Affected

This checklist identifies environmental and other factors that might be affected by the proposed activities. The environmental factors checked below would potentially be affected by this project, involving at least one impact that is a “Potentially Significant Impact” as indicated by the checklist on the following pages. Please refer to the checklist table in each section for the corresponding discussion.

- | | | |
|--|---|--|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agricultural Resources | <input type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources | <input type="checkbox"/> Geology/Soils |
| <input checked="" type="checkbox"/> Greenhouse Gas Emissions | <input checked="" type="checkbox"/> Hazards and Hazardous Materials | <input checked="" type="checkbox"/> Hydrology/Water Quality |
| <input type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Noise |
| <input type="checkbox"/> Population/Housing | <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation |
| <input type="checkbox"/> Transportation/Traffic | <input type="checkbox"/> Utilities/Service Systems | <input checked="" type="checkbox"/> Mandatory Findings of Significance |

Determination

On the basis of this initial evaluation:

- I find that the proposed project WOULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION has been prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions to the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION has been prepared.
- I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the proposed project MAY have an impact on the environment that is “potentially significant” or “potentially significant unless mitigated” but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards and (2) has been addressed by mitigation measures based on the earlier analysis, as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the project, nothing further is required.

Dean F. Messer
Chief, Division of Environmental Services

Date

I. Aesthetics

	Potential Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect on a scenic vista?			X	
b) Substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a State scenic highway?			X	
c) Substantially degrade existing visual character or quality of the site and its surroundings?			X	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?				X

Environmental Setting

Visual resources consist of the natural and manmade features that give a particular environment its aesthetic qualities. Landscape character is evaluated to assess whether a proposed project would appear compatible with the existing setting or would contrast noticeably with the setting and appear out of place. Recreational uses are generally considered to have high visual sensitivity, as are views from scenic routes or corridors, or along scenic highways and wilderness areas. The primary areas of concern generally are associated with changes to prominent topographic features, changes in the character of an area with high visual sensitivity, removal of vegetation, or blockage of public views of a visually sensitive landscape.

The project is located along the levee of Miner Slough, which sits below the surrounding levees. Most of the adjacent area is agricultural. The scenic character of the project area is defined mostly by riparian habitat along the banks of the slough and the marshes and agricultural areas visible from the levee roads. The construction activities would be visible from Miner Slough as well as Ryer Island levee road (State Route (SR) 84) adjacent to the project location. There are no State-designated visual resources within or near the project site. Nighttime views within the project site are limited; lighting is associated with agricultural operations on Ryer Island to the east and Arrowhead Harbor north of the project.

a) Have a substantial adverse effect on a scenic vista?

Less than Significant. A scenic vista can be affected by directly reducing the scenic quality of the vista or by blocking views of the scenic resource. The project construction will be short term and will not have a permanent effect on the visual character of the area. The Project components would be visible to boaters, but would not restrict views of the surrounding areas.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?

Less than Significant. Miner Slough levee has been previously modified by the addition of rock slope protection and vegetation is regularly cleared from the levees as part of ongoing maintenance. The project would not damage scenic resources and is not visible from a State scenic highway. The project would require a minimal amount of tree removal (up to 20 trees). To mitigate for the loss of trees, cuttings of trees will be replanted at a site designated by DWR and approved by the resource agencies.

c) Substantially degrade existing visual character or quality of the site and its surroundings?

Less than Significant. The Project would not substantially degrade the existing visual character or quality of the site and its surroundings. As noted above, the slough has been altered through the addition of rock-lined levees, and the construction activities would affect only a small portion of the slough and would be temporary in nature.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

No Impact. The project activities will not create new sources of light. All work will be conducted between the hours of sunrise and sunset. The barges would be lit with warning lights for nighttime visibility during the construction period. These lights would not be visible from the surrounding lands as land is lower than the slough, but will be visible from Ryer Island levee road.

II. Agricultural and Forest Resources

	Potential Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
<p>II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:</p>				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				X

Environmental Setting

Agricultural lands can be found throughout the Sacramento-San Joaquin Delta. The proposed activities will take place on the levee adjacent to former agricultural lands and within the Miner Slough. These lands are not considered prime or unique farmland or farmland of State-wide importance and are not used for agricultural purposes. The project activities will not conflict with any existing zoning or involve changes in the existing environment.

Discussion

- a) Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact. The proposed activities will take place on the levee adjacent to land that is designated as "Other Land" under the Resource Agency's Farmland Mapping and Monitoring Program.

b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. The project involves repairing the levee on the east side of Prospect Island, which is not under a Williamson Act contract. Prospect Island is zoned for agriculture under the Solano County General Plan but the project would not conflict with existing zoning.

c) Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No Impact. The project would not conflict with existing forestland zoning or cause rezoning of forestland.

d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. The project activities will take place on a levee and will not result in the loss or conversion of forestland. However, the project will remove up to approximately 20 trees. Removal of these trees will be mitigated for at a 3:1 ratio and trees will be replanted at locations approved by Resource Agencies.

e) Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

No Impact. The project activities involve the repair of an existing levee and will not result in changes in the existing environment that could result in the conversion of Farmland or forestland.

III. Air Quality

	Potential Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Where available, significance criteria established by applicable air quality management or air pollution control district may be relied on to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?				X
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?			X	
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?			X	
d) Expose sensitive receptors to substantial pollutant concentrations?				X
e) Create objectionable odors affecting a substantial number of people?				X

Environmental Setting

The proposed project site is within Solano County, which is under the jurisdiction of Yolo-Solano Air Quality Management District (YSAQMD) (Yolo-Solano Air Quality Management District 2009). This section has been prepared using methods and assumptions recommended in the “Handbook for Assessing and Mitigating Air Quality Impacts of the Yolo-Solano Air Quality Management District” (Yolo-Solano Air Quality Management District 2007) to provide guidance for analyzing and mitigating project-specific air quality impacts.

Discussion

YSAQMD established project-level thresholds for several pollutants as shown in Table 1. The pollutants of concern include particulate matter less than 10 micrometers in diameter (PM₁₀), carbon monoxide (CO), and the precursors to ozone, which are reactive organic gases (ROG) and nitrogen oxides (NO_x). The thresholds apply to both construction and operational impacts. Moreover, YSAQMD also adopted thresholds for air toxics, odors, and cumulative impacts.

Table 1. YSAQMD Thresholds of Significance for Criteria Pollutants

Pollutant	Thresholds of Significance
ROG	10 tons/year
NO _x	10 tons/year
PM ₁₀	80 lbs/day
CO	Violation of a state ambient air quality standard for CO

YSAQMD recommends using URBEMIS emissions model to perform quantified, screening-level air quality analyses, and it requires implementing mitigation measures to reduce emissions even if a project would not exceed district thresholds (URBan EMISsions 2007).

The major emissions from this process would include:

- Fugitive dusts (PM₁₀, and PM_{2.5}) primarily from earth-moving activities such as excavation,
- Combustion emissions of criteria air pollutants (ROG, NO_x, carbon monoxide, carbon dioxide, PM₁₀, and PM_{2.5}) primarily from operation of heavy off-road construction equipment (primarily diesel-operated), material-hauling trips using barges, as well as worker commute trips (primarily gasoline-operated).

Because YSAQMD was designated as “non-attainment” for both federal and state ozone standard and state PM₁₀ Standard, ozone precursors (such as ROG and NO_x) and particular matters (PM₁₀ and PM_{2.5}) are pollutants of

greatest concern at YSAQMD. On the local level, the project area is surrounded by open space, and no other on-going or future sources of air pollutants have been identified on or near the project site. On the regional level, YSAQMD addresses the cumulative impacts through preparing air quality plans to achieve the attainment status for these pollutants and adopting project-level criteria pollutant emission threshold (Table 1). Using the latest version of URBEMIS software, the emissions from the project were estimated. The calculation was based on the worst-case scenario by assuming all equipment would be operating on a workday. The emissions are presented in Table 2. The emission levels of the criteria pollutants of concern are well below significant thresholds set by YSAQMD.

Table 2: Air Pollutant Emissions for the Project

	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Daily Emissions (lbs/day)	8.00	65.00	34.97	0.01	27.81	7.78
Yearly Emissions (tons/year)	0.18	1.43	0.77	0.00	0.61	0.17

The emissions would be anticipated only during the 3-month levee repair period. No operational emissions will be generated after the project is completed.

a) **Would the project conflict with or obstruct implementation of the applicable air quality plan consistent with Air Quality Management Plans**

No Impact. The proposed project involves levee repair at several locations surrounded mostly by open space. Repair of the levee will be carried out within 3 months, using construction equipment such as an excavator, a backhoe and a crane mounted on a barge. Operation of the construction equipment, and trips for worker commute and material hauling would generate air pollutant emissions such as particulate matters (PM₁₀, and PM_{2.5}), ROG, NO_x, and carbon monoxide during the 3-month period. DWR will adopt applicable BMPs to reduce air pollutant emissions. In addition, the proposed project will not generate emissions after the project is completed.

The project would not exceed the threshold values set by YSAQMD, nor would it conflict with or obstruct implementation of YSAQMD's air quality plans.

b) **Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation**

Less than Significant. As discussed above, the proposed project will generate air pollutant emissions during the levee repair process. The emissions include criteria air pollutants such as ROG, NO_x, carbon monoxide, PM₁₀, and PM_{2.5} from fugitive dusts and combustion emissions. Emissions would not exceed the threshold values set by YSAQMD; therefore, the project's contribution to an existing or projected air quality violation would not be considered as substantial. To minimize the temporary construction related emission impacts to the extent feasible, construction contractors would be required to implement best management practices including:

- On-road and off-road vehicle tire pressures shall be maintained to manufacturer specifications. Tires shall be checked and re-inflated at regular intervals.
- Construction equipment engines shall be maintained to manufacturer's specifications.
- The project will use properly tuned equipment that meets current emissions standards.
- Best Management Practices (BMPs) will be implemented to minimize the potential for dust impacts near construction activities. BMPs will include:
 - Water all active construction sites. Frequency should be based on the type of operation, soil, and wind exposure.
 - Cover all vehicles hauling dirt, sand, or loose materials while in transit.
 - Cover inactive storage piles.

The proposed project would not build any permanent facilities with stationary or mobile sources of air pollutants. There will be no operational air pollutant emissions from the project.

c) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?

Less than Significant. The pollutant emissions from the proposed project, particularly the ozone precursors and PM₁₀ emissions, are well below the corresponding threshold values. Therefore, cumulative impacts caused by the proposed project would be less than significant.

d) Would the project expose sensitive receptors to substantial pollutant concentrations?

No Impact. No sensitive receptors are identified within close proximity to the project sites. In addition, the estimated emission levels for air pollutants are less than the threshold values set by YSAQMD; therefore, the project will not expose sensitive receptors to substantial pollutant concentrations. As a result, the proposed project would have no impact on this item.

e) Would the project create objectionable odors affecting a substantial number of people?

No Impact. The proposed project would involve excavation and placing rock slope protection and soil on levee slopes in an area surrounded by water, farmland and open space. No objectionable odors are anticipated from this type of activity, and there will not be a substantial number of people in the project area. Therefore, the proposed project would have no impact on this item.

DWR will implement feasible mitigation measures to reduce air pollutant emissions during construction of the project. As stated in the Greenhouse Gas section, DWR's "Greenhouse Gas Emissions Reduction Plan" requires this project to adopt applicable Best Management Practices (BMP) from "DWR's list of BMPs for construction and maintenance activities to reduce GHG emissions," (DWR 2013) and implementation of these practices will not only reduce greenhouse gas (GHG) emissions but also reduce air pollutant emissions from the project by minimizing fuel usage by construction equipment, reducing fuel consumption for transportation of construction materials and reducing the amount of landfill material.

Mitigation Measures for Air Quality

Best management practices have been included in the Air Quality section above as well as the Greenhouse Gas Emissions section (page 38).

IV. Biological Resources

	Potential Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW, USFWS, or NOAA Fisheries?		X		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies or regulations or by the CDFW, USFWS, or NOAA Fisheries?		X		
c) Have a substantial adverse effect on federally protected wetlands as defined by section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?			X	
d) Interfere substantially with movement of any native resident or migratory fish or wildlife species or established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			X	
e) Conflict with local policies or ordinances protecting biological resources (i.e., tree preservation)?				X
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?				X

Environmental Setting

Miner Slough is located within the legal Sacramento-San Joaquin Delta and is a tidally influenced slough, which provides habitat for many species. The topography in the vicinity of the project site is flat, which lies at approximately 20 feet mean sea level (MSL). Miner Slough lies below the levee, which has been previously modified with the addition of rock slope protection. Habitat along the levee also consists of riparian habitat, a tree-dominated community found in association with streams and rivers. Common overstory species include trees such as boxelder (*Acer negundo*), alder (*Alnus rhombifolia*), Brazilian pepper tree (*Schinus terebinthifolius*), sanbar willow (*Salix exigua*), and black locust (*Robinia pseudoacacia*). The understory includes herbaceous species such as mugwort (*Artemisia douglasiana*), Bur-marigold (*Bidens* sp.), buttonbush (*Cephalanthus occidentalis*), rough horsetail (*Equisetum hyemale*), western goldenrod (*Euthamia occidentalis*), soft rush (*Juncus effusus*), California wild rose (*Rosa californica*), Himalayan blackberry (*Rubus armeniacus*), Suisun aster (*Symphotrichum lentum*), stinging nettle (*Urtica dioica*), and California wild grape (*Vitis californica*).

Research and Field Surveys Conducted

Information on biological resources of the project site is based on a review of pertinent literature and databases (CDFW 2013 and USFWS 2013). Table 3 summarizes the listing status, habitat requirements, presence or absence of suitable habitat within or adjacent to the project area, and the potential for the presence of special status species to occur in the vicinity of the project based on suitable habitat. Habitat requirements for each species were compared with habitat features in the project area to determine if the species has potential to occur in the area. If potential habitat is present or the species was actually found during surveys, potential impacts due to the project were assessed and mitigation measures proposed.

DWR’s Environmental Scientists conducted field surveys on Prospect Island in 2009 and 2010. Subsequent surveys for the Miner Slough Levee Repair Project were conducted in the fall of 2013. Levee repair locations were also reviewed to evaluate potential impacts, if any, to environmental and cultural resources. Surveys included a reconnaissance-level investigation of the project site, trapping surveys for Giant Gartersnake, a tree survey, wetland delineations, and an elderberry shrub (*Sambucus* spp.) survey.

Table 3. Listed species with the potential to occur within the project area.

Common Name <i>Species Name</i>	Status ¹ (F/S/X/CRPR)	Habitat	Potential to Occur in project area	Potential for Project Impacts
INVERTEBRATES				
Antioch Dunes anthicid beetle <i>Anthicus antiochensis</i>	--/--/--	Interior sand dunes and sand bars.	None – habitat does not occur within project area.	None.
Sacramento Anthicid Beetle <i>Anthicus sacramento</i>	--/--/--	Interior sand dunes and sand bars with some vegetative cover. Also can be found in dredge spoil heaps. Found in locations along the Sacramento, San Joaquin rivers from Shasta to San Joaquin Counties, and at one site along the Feather River.	None – habitat does not occur within project area.	None.
Conservancy Fairy Shrimp <i>Branchinecta conservatio</i>	E/--/--	Large, cool-water vernal pools with moderately turbid water	None – vernal pool habitat does not exist within the project area.	None.
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i>	T/--/X/--	Vernal pools; also sandstone rock outcrop pools	None – vernal pool habitat does not exist within the project area.	None.
Mid-valley Fairy Shrimp <i>Branchinecta mesoallensis</i>	SC/--/--	Found in small short-lived vernal pools and grass-bottomed swales ranging from 4-663 square feet in area and averaging less than 4 inches in depth.	None – vernal pool habitat does not exist within the project area.	None.
Valley Elderberry Longhorn Beetle <i>Desmocerus californicus dimorphus</i>	T/--/X/--	Riparian and oak savanna habitats with blue elderberry shrubs; elderberries are the host plant	Potential – Habitat exists within riparian areas along the levee within the project area. However, surveys have not found any VELB present in the project area.	Unlikely – Measures will be taken to avoid all elderberry shrubs.
Delta green ground beetle <i>Elaphrus viridis</i>	T/--/--	Species is only known to occur in south-central Solano County, near Jepson Prairie Preserve. Habitat requirements not well developed, believed that the species prefers more open habitats in the grassland-playa pool matrix.	None – habitat does not occur in project area.	None.
Ricksecker’s water scavenger beetle <i>Hydrochara rickseckeri</i>	FSC/--/--	Aquatic, known to occur in vernal pools. Recorded in central coastal CA and southern Sacramento Valley, known to occur in Solano County near Jepson Prairie.	Unlikely – Habitat does not exist within the project area. Known throughout the bay area, at Jepson Prairie, and the Sacramento area.	None – aquatic habitat within the project area is not suitable for the beetle.
Vernal Pool Tadpole Shrimp <i>Lepidurus packardi</i>	E/--/X/--	Occupies a variety of vernal pool habitats in Central Valley and San Francisco Bay Area.	None – vernal pool habitat does not exist within the project area.	None.
California linderiella <i>Linderiella occidentalis</i>	--/--/--	Vernal pools, swales, and other ephemeral wetlands. Central Valley and central coastal CA.	None – vernal pool and other ephemeral wetlands that are habitat for this species does not exist within the project area.	None.
Antioch andrenid bee <i>Perdita scitula antiochensis</i>	FSC/--/--	Sandy substrates of the Antioch Dunes area. Known to visit flowers of CA matchweed (<i>Gutierrezia californica</i>), buckwheat (<i>eriogonum sp.</i>), telegraph weed, and <i>Lessingia sp.</i>	None – habitat does not exist within project area.	None.

Table 3. Listed species with the potential to occur within the project area.

Common Name <i>Species Name</i>	Status ¹ (F/S/X/CNPS)	Habitat	Potential to Occur in project area	Potential for Project Impacts
FISH				
Green Sturgeon <i>Acipenser medirostris</i>	T/--/--	Large, main stem rivers with cool water and cobble, clean sand, or bedrock for spawning.	Likely – within Southern Distinct Population Segment. Adult and juvenile sturgeon may occur within the project area.	Unlikely –in-stream work will be conducted during Aug. 1 to Nov. 30 when fish are least likely to be in streams in high numbers.
Delta Smelt <i>Hypomesus transpacificus</i>	T/E/X/--	Tidal areas from fresh water up to 18 ppt, but primarily near and upstream of the brackish zone where bottom salinity is approximately 2 ppt. Spawning occurs in tidal areas, most commonly upstream of salinity at 2 ppt. High turbidity levels (e.g. >10 ntu) and moderate temperatures (<25°C) are required for all life stages.	Likely – within known range and critical habitat of Delta Smelt. Adult migration and juvenile rearing not likely to occur in Miner Slough during the work window.	Unlikely –in-stream work will be conducted during Aug. 1 to Nov. 30 when fish are least likely to be in streams in high numbers.
River Lamprey <i>Lampetra ayresi</i>	SC/SSC/--/--	Anadromous parasitic species found in coastal streams and upper reaches of San Francisco Estuary and tributaries; spawn in streams in spring; adults may migrate briefly to ocean before returning in fall.	Likely – within known range of river lampreys.	Unlikely –in-stream work will be conducted during Aug. 1 to Nov. 30 when fish are least likely to be in streams in high numbers.
Central Valley Spring-run Chinook Salmon <i>Oncorhynchus tshawytscha</i>	T/T/X/--	Low- to mid-elevation rivers and streams with cold water, clean gravel of appropriate size for spawning, and suitable rearing habitat; typically rear in freshwater for one or more years before migrating to the ocean.	Likely – within known range of and critical habitat of spring-run Chinook. Adult and juvenile Chinook are not known to occur in project area within narrow work window (Aug. 1 to Nov. 30).	Unlikely –in-stream work will be conducted Aug. 1 to Nov. 30 when fish are least likely to be in streams in high numbers.
Central Valley Fall and Late Fall Run Chinook Salmon <i>Oncorhynchus tshawytscha</i>	SC/--/--/--	Main stem river reaches with cool water and available spawning; typically rear in freshwater for less than one year before migrating to the ocean.	Likely – within known range of fall/late fall run Chinook. Adults may be present towards later period of work window (Aug. 1 to Nov. 30).	Unlikely –in-stream work will be conducted Aug. 1 to Nov. 30 when fish are least likely to be in streams in high numbers.
Sacramento Splittail <i>Pogonichthys macrolepidotus</i>	--/SSC/--/--	Slow-moving sections of rivers and sloughs in Delta and Suisun Marsh; tolerate a range of salinities, low dissolved oxygen levels, and temperatures; preferred spawning habitat over vegetation in floodplains in late winter through spring.	Likely – within known range of splittail.	Unlikely –in-stream work will be conducted Aug. 1 to Nov. 30 when fish are least likely to be in streams in high numbers.
Longfin Smelt <i>Spirinchus thaleichthys</i>	--/T/--/--	Euryhaline (capable of tolerating a wide range of salinities), pelagic and anadromous species found in scattered bays and estuaries from CA to Alaska.	Likely – within known range of longfin smelt; however, they are not present in Miner Slough during the fall work window.	Unlikely – project activities are minor in scope and in-stream work will be conducted during Aug. 1 to Nov. 30 when fish are least likely to be in streams in high numbers.

Table 3. Listed species with the potential to occur within the project area.

Common Name Species Name	Status ¹ (F/S/X/CNPS)	Habitat	Potential to Occur in project area	Potential for Project Impacts
AMPHIBIANS				
California Tiger Salamander, central population <i>Ambystoma californiense</i>	T/T/X/--	Natural vernal pools or seasonal ponds and in burrows in adjacent uplands in parts of the Central Valley grasslands and low foothill regions.	None – No suitable habitat exists, so they are not expected to occur.	None – No suitable habitat.
California Red-legged Frog <i>Rana (aurora) draytonii</i>	T/SSC/X/--	Permanent and semi-permanent aquatic habitats such as creeks and cold-water ponds, with emergent and submergent vegetation and in cracks and burrows in adjacent uplands.	None – No suitable habitat exists for the California red-legged frog.	None – No suitable habitat.
REPTILES				
Western Pond Turtle <i>Actinemys marmorata</i>	--/SSC/--/--	Variety of permanent and intermittent aquatic habitats throughout the state, including rivers, streams, lakes, ponds, marshes, vernal pools, and human-constructed environments such as ponds associated with waste-water, stock, and logging operations. Nest in grassy uplands and overwinter under mud, dirt, or leaf litter.	Likely – Western pond turtles are relatively common throughout the rivers, sloughs, ponds, and irrigation ditches in the project area.	Unlikely – Western pond turtles may be temporarily disturbed from basking sites by water operations. There is a small chance of impacting nests during land operations.
Giant Gartersnake <i>Thamnophis gigas</i>	T/T/--/--	Sloughs, canals, low-gradient streams and marsh habitats; irrigation ditches and rice fields; grassy banks and emergent vegetation for basking; high ground crack or burrows protected from flooding in the Central Valley.	Low – The distribution of Giant Gartersnakes in the project area is poorly understood.	Unlikely – Attempts will be made to avoid impacts through avoiding habitat and working within the snake's active season (May 1 – Oct 1). Minimization measures have been proposed.
MAMMALS				
Western Red Bat <i>Lasiurus blossevillii</i>	--/SSC/--/--	Roosts primarily in tree foliage, occasionally shrubs; roosts in small family groups rather than large colonies as other bats; prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging, including grasslands, shrublands, and open woodlands.	Likely – Year-round range spans the Central Valley, Sierra Nevada foothills, Coast Ranges, and coast except Humboldt and Del Norte counties; documented foraging in most habitat types in the Delta; roosting documented in the Delta in Brannan Island State Recreation Area.	Unlikely – Trees to be removed will be limited to the minimum extent feasible to make levee repairs. BMP's will be established and implemented in coordination with CDFW to avoid impacts to habitat.
American Badger <i>Taxidea taxus</i>	--/SSC/--/--	Drier open shrub, forest, and herbaceous habitats with friable soils. Year-round range spans all of CA except the Humboldt and Del Norte coasts.	Unlikely – American badger not likely to occur within the project area.	None.

Table 3. Listed species with the potential to occur within the project area.

BIRDS				
Common Name Species Name	Status¹ (F/S/X/CNPS)	Habitat	Potential to Occur in project area	Potential for Project Impacts
Tricolored Blackbird <i>Agelaius tricolor</i>	BCC/SSC (nesting)	Nests colonially in large, dense stands of freshwater marsh, riparian scrub, and other shrubs and herbs; forages in grasslands and agricultural fields.	Unlikely – Species is known to occur near the project area; however, habitat within the project area is of poor quality.	Unlikely – Habitat in the project area is of poor quality.
Grasshopper Sparrow <i>Ammodramus savannarum</i>	-/SSC (nesting)	Nests and forages in short to mid-height, moderately open grasslands; favors a mix of native grasses, forbs, and scattered shrubs.	Unlikely – Species is known to occur near the project area; however, habitat within the project area is of poor quality.	Unlikely – Habitat in the project area is of poor quality.
Great Blue Heron <i>Ardea herodias</i>	-/CFGC, Rookeries	Nests colonially in tall trees; forages in freshwater and saline marshes, shallow open water, and occasionally cropland or low, open upland habitats, such as pastures.	Likely – Species is known to forage within the project area; however, rookeries have not been documented within the project area.	Unlikely – No rookeries present within the project area, however if a rookery is found, mitigation measures will be implemented to avoid adverse effects.
Great Egret <i>Ardea alba</i>	-/CFGC, Rookeries	Nests colonially in tall trees; forages in freshwater and saline marshes, shallow open water, and occasionally cropland or low, open upland habitats, such as pastures.	Likely – Species is known to forage within the project area; however, rookeries have not been documented within the project area.	Unlikely – No rookeries present within the project area, however if a rookery is found, mitigation measures will be implemented to avoid adverse effects.
Western Burrowing Owl <i>Athene cunicularia hypugea</i>	BCC/SSC (nesting; year round)	Nests and forages in open, dry grasslands, deserts, and agricultural fields characterized by low-growing vegetation and suitable burrows.	Unlikely – Species is known to occur near the project area; however, habitat within the project area is of poor quality.	Unlikely – Habitat within the project area is of poor quality.
Swainson's Hawk <i>Buteo swainsoni</i>	BCC/ST (nesting)	Nests peripheral to riparian systems or loan trees in agricultural fields or along roadsides when adjacent to suitable foraging habitat such as grasslands or agricultural fields, particularly alfalfa.	Likely – This species has been documented near the project area and may nest in riparian trees within the project area.	Unlikely – Species may nest within the project area. However, mitigation measures will be used to avoid impacts if it is found nesting.
Mountain Plover <i>Charadrius montanus</i>	PT, BCC/SSC (wintering)	Winters in sparsely vegetated or disked fields and grazed grasslands nearly devoid of vegetation.	None – appropriate habitat does not exist within the project area.	None.
Northern Harrier <i>Circus cyaneus</i>	-/SSC (nesting)	Nests and roosts on the ground among primarily in open wetlands, but also in a wide variety of habitats, wet pastures and grasslands.	Likely – Species is known to occur near project area; may occur within the project area where suitable habitat is present.	Unlikely – Species is not known to nest within the project area; however mitigation measures will be used to avoid impacts if it is found nesting.
Western Yellow-billed Cuckoo <i>Coccyzus americanus occidentalis</i>	PT, BCC/E	Nests in valley, foothill, and desert riparian forest with dense deciduous trees and shrubs, especially willows; other associated vegetation includes cottonwood trees, blackberry, nettle, and wild grape.	Unlikely – Species has not been documented nesting in the region in recent history, but individuals may use nearby riparian habitats during migration, however habitat within the project area is fragmented and of poor quality.	None.

Table 3. Listed species with the potential to occur within the project area.

Common Name Species Name	Status¹ (F/S/X/CNPS)	Habitat	Potential to Occur in project area	Potential for Project Impacts
White-tailed Kite <i>Elanus leucurus</i>	-/FP (nesting)	Forages in open areas such as grasslands, oak savannahs, and woodlands, scrublands, and marshes; nests in trees and tall shrubs adjacent to foraging habitat.	Likely – Species is known to occur near Project Area; may occur within the project area where suitable habitat is present.	Unlikely – Species may nest within the project area; however mitigation measures will be used to avoid impacts if it is found nesting.
California Black Rail <i>Laterallus jamaicensis coturniculus</i>	BCC/T, FP	Nests and forages in saline, freshwater, or brackish emergent marshes with dense vegetative cover and adjacent high water refugia.	Unlikely – Species occurs within the Delta, but has not been documented near the project area. Available habitat is of poor quality.	Unlikely – Habitat within the project area is of poor quality.
Song Sparrow (Modesto population) <i>Melospiza melodia</i>	-/SSC	Nests in emergent marsh, riparian scrub, riparian thickets, and riparian forest with blackberry understory, and along vegetated canals and levees.	Likely – Species is known to occur within the project area where suitable habitat is present.	Unlikely – Species may nest within the project area, however mitigation measures will be used to avoid impacts if it is found nesting.
Black-crowned Night Heron <i>Nycticorax nycticorax</i>	--/SSC/--/-- (nesting colony)	Nests colonially in trees, forages along edges of emergent marsh, sloughs, and open water.	Likely – Species is known to forage within the project area; however, rookeries have not been documented within the project area.	Unlikely – No rookeries present within the project area, however if a rookery is found, mitigation measures will be implemented to avoid adverse effects.
Double-crested Cormorant <i>Phalacrocorax auritus</i>	-/WL (rookeries) (nesting colony)	Forages in open water; breeds colonially in rock ledges and trees.	Likely – Species is known to forage within the project area; however, rookeries have not been documented within the project area.	Unlikely – No rookeries present within the project area, however if a rookery is found, mitigation measures will be implemented to avoid adverse effects.
White-faced Ibis <i>Plegadis chihi</i>	-/WL (rookeries) (nesting colony)	Forages in wetlands and irrigated or flooded croplands and pastures; breeds in dense freshwater marsh.	Likely – Nests nearby the project area; may forage within the project area, but no nesting colonies have been documented.	Unlikely – Nesting habitat within the project area is of poor quality.
Yellow-headed Blackbird <i>Xanthocephalus xanthocephalus</i>	-/SSC (nesting)	Nests in freshwater emergent wetlands with dense vegetation and deep water, often along borders of lakes or ponds.	Likely – Species is known to nest near the project area and may forage there; however, nesting habitat within the project area is of poor quality.	Unlikely – Nesting habitat within the project area is of poor quality.
California Clapper Rail <i>Rallus longirostris obsoletus</i>	E/E, FP	Nests and forages in dense cordgrass and cattail marshes with vegetated refugia during the highest tides.	None – Project area is outside of the species' range, and no appropriate habitat exists within the project area.	None.
Ferris' milk-vetch <i>Astragalus tener var. ferrisiae</i>	--/--/--/1B.1	Found in meadow and seep, valley and foothill grassland, and wetland habitats.	None – no appropriate habitat within the project area.	None.
Alkali milk-vetch <i>Astragalus tener var. tener</i>	--/--/--/1B.2	Found in alkali playa, valley and foothill grassland, vernal pool, and wetland habitats.	None – no appropriate habitat within the project area.	None.
San Joaquin spearscale <i>Atriplex joaquiniana</i>	--/--/--/1B.2	Found in chenopod scrub, meadow and seep, and valley and foothill grassland habitats.	None – no appropriate habitat within the project area.	None.

Table 3. Listed species with the potential to occur within the project area.

Common Name <i>Species Name</i>	Status ¹ (F/S/X/CNPS)	Habitat	Potential to Occur in project area	Potential for Project Impacts
PLANTS				
Heartscale <i>Atriplex cordulata</i> var. <i>cordulata</i>	--/--/--/1B.2	Saline or alkaline soils in chenopod scrub, meadows, and seeps, sandy areas in valley and foothill grassland; below 1,837 ft. Western Central Valley and valleys of adjacent foothills.	None – no appropriate habitat within the project area.	None.
Brittlescale <i>Atriplex depressa</i>	--/--/--/1B.2	Alkaline clay in chenopod scrub, plays, valley and foothill grasslands; 3-1,049 ft western and eastern Central Valley and adjacent foothills on west side of Central Valley.	None – no appropriate habitat within the project area.	None.
Watershield <i>Brasenia schreberi</i>	--/--/--/2B.3	Freshwater marshes; 98-7,218 ft. Scattered occurrences in northern and central CA; widespread across US.	None – project is outside the elevation range of the species.	None.
Bristly sedge <i>Carex comosa</i>	--/--/--/2B.1	Coastal prairie, marshes and swamps at lake margins, valley and foothill grassland; below 2,050. Scattered occurrences throughout CA, Oregon, Washington, and elsewhere.	Unlikely – appropriate habitat is present within the project area, but the species was not detected during a cursory pre-project survey	Unlikely – pre-project surveys will be conducted and, if this species is detected, Avoidance and Minimization Measures will be implemented.
Bolander's water-hemlock <i>Cicuta maculate</i> var. <i>bolanderi</i>	--/--/--/2.1	Found in marshes and swamps, and coastal, fresh or brackish water habitats.	Unlikely – appropriate habitat is present within the project area, but the species was not detected during a cursory pre-project survey	Unlikely – pre-project surveys will be conducted and, if this species is detected, Avoidance and Minimization Measures will be implemented.
Peruvian dodder <i>Cuscuta obtusiflora</i> var. <i>glandulosa</i>	--/--/--/2B.2	Found in marsh and swamp, salt marsh, and wetland habitats.	Unlikely – appropriate habitat is present within the project area, but the species was not detected during a cursory pre-project survey	Unlikely – pre-project surveys will be conducted and, if this species is detected, Avoidance and Minimization Measures will be implemented.
Pappose tarplant <i>Centromadia parryi</i> ssp. <i>parryi</i>	--/--/--/1B.2	Coastal prairie, meadows and seeps, coastal salt marshes and swamps, alkaline soils in vernal mesic valley and foothill grassland; 6-1,378 ft. North and Central Coast Ranges, the southern Sacramento Valley; occurrences in Butte, Colusa, Glenn, Lake, Napa, San Mateo, and Solano counties.	None – no appropriate habitat within the project area.	None.
Dwarf Downingia <i>Downingia pusilla</i>	--/--/--/2B.2	Wet areas in valley and foothill grassland, vernal pools; 3-1,460 ft. Inner North Coast Ranges, southern Sacramento Valley, northern and central San Joaquin Valley.	None – no appropriate habitat within the project area.	None.
Fragrant Fritillary <i>Fritillaria lilacea</i>	--/--/--/1B.2	Adobe soils of interior foothills, coastal prairie, coastal scrub, valley and foothill grassland, often on serpentinite; 10-1,345 ft. Coast Ranges from Marin County to San Benito County.	None – no appropriate habitat within the project area.	None.

Table 3. Listed species with the potential to occur within the project area.

Common Name <i>Species Name</i>	Status ¹ (F/S/X/CNPS)	Habitat	Potential to Occur in project area	Potential for Project Impacts
Legenere <i>Legenere limosa</i>	--/--/1B.1	Found in vernal pool and wetland habitats.	None – no appropriate habitat within the project area	None.
Adobe-Lily <i>Fritillaria pluriflora</i>	--/--/B.2	Chaparral, cismontane woodland, valley and foothill grassland, often on adobe soils; 197-2,313 ft. Northern Sierra Nevada foothills; Inner North Coast Ranges, edges of Sacramento Valley.	None – no appropriate habitat within the project area.	None.
Boggs Lake Hedge-hyssop <i>Griatiola heterosepala</i>	--/E/--/1B.2	Clay soils in areas of shallow water, lake margins of swamps and marshes, vernal pool margins; 33-7,792 ft. Inner North Coast Ranges, Central Sierra Nevada foothills, Sacramento Valley and Modoc Plateau.	None – no appropriate habitat within the project area.	None.
Woolly rose-mallow <i>Hibiscus lasiocarpus var. occidentalis</i>	--/--/1B.2	Found in freshwater marsh, marsh and swamp, and wetland habitats.	Unlikely – appropriate habitat is present within the project area, but was not detected during a cursory survey.	Unlikely – pre-project surveys will be conducted and, if this species is detected, mitigation measures will be implemented
Carquinez goldenbush <i>Isocoma arguta</i>	--/--/1B.1	Annual grassland on alkaline soils and flats; 3-66 ft. Deltaic Sacramento Valley, Suisun Slough, Contra Costa and Solano counties.	None – no appropriate habitat within the project area.	None.
Northern CA black walnut <i>Juglans hindsii</i>	--/--/1B.1	Found in riparian forest and riparian woodland habitats.	Likely – found along riparian areas within project area, however individuals in this area are not considered to be part of historical populations and may be of hybrid origin.	Unlikely – the project may have potential to impact black walnut trees, but as these potentially affected individuals are not protected as CNPS rare plants, they will be addressed as part of the permit with CDFW.
Delta tulle pea <i>Lathyrus jepsonii var. jepsonii</i>	--/--/1B.2	Found in freshwater marsh, marsh and swamp, and wetland habitats.	Unlikely – appropriate habitat is present within the project area, but the species was not detected during a cursory pre-project survey	Unlikely – pre-project surveys will be conducted and, if this species is detected, Avoidance and Minimization Measures will be implemented.
Delta mudwort <i>Limosella subulata</i>	--/--/2B.1	Found in brackish marsh, freshwater marsh, marsh and swamp, riparian scrub, wetland habitats.	Unlikely – waterside habitat is heavily ripped within the intertidal zone, so habitat is of limited suitability for this species.	Unlikely – pre-project surveys will be conducted and, if this species is detected, Avoidance and Minimization Measures will be implemented.
Heckard's pepper-grass <i>Lepidium latipes var. heckardii</i>	--/--/1B.2	Found in valley and foothill grassland, vernal pool, and wetland habitats.	None – no appropriate habitat within the project area	None.
Mason's lilaeopsis <i>Lilaeopsis masonii</i>	--/--/1B.1	Found in freshwater marsh, marsh and swamp, riparian scrub, and wetland habitats.	Unlikely – waterside habitat is heavily ripped within the intertidal zone, so habitat is of limited suitability for this species.	Unlikely – pre-project surveys will be conducted and, if this species is detected, Avoidance and Minimization Measures will be implemented.
Bearded popcorn flower <i>Plagiobothrys hystriculus</i>	--/--/1B.1	Mesic grassland, vernal pools; below 899 ft. Montezuma Hills in Napa, Solano, and Yolo counties.	None – no appropriate habitat within the project area	None.

Table 3. Listed species with the potential to occur within the project area.

Common Name <i>Species Name</i>	Status ¹ (F/S/X/CNPS)	Habitat	Potential to Occur in project area	Potential for Project Impacts
Baker's navarretia <i>Navarretia leucocephala ssp. bakeri</i>	--/--/1B.2	Found in cismontane woodland, lower montane coniferous forest, meadow and seep, valley and foothill grassland, vernal pool and wetland habitats.	None – no appropriate habitat within the project area	None.
Colusa grass <i>Neostapfia colusana</i>	T/E/--/1B.1	Found in vernal pool and wetland habitats.	None – no appropriate habitat within the project area	None.
Sanford's arrowhead <i>Sagittaria sanfordii</i>	--/--/1B.2	Found in marsh and swamp, and wetland habitats.	Unlikely – appropriate habitat is present within the project area, but the species was not detected during a cursory survey.	Unlikely – pre-project surveys will be conducted and, if this species is detected, mitigation measures will be implemented
Marsh skullcap <i>Scutellaria galericulata</i>	--/--/2.2	Found in lower montane coniferous forest, marsh and swamp, meadow and seep, and wetland habitats.	Unlikely – appropriate habitat is present within the project area, but the species was not detected during a cursory survey.	Unlikely – pre-project surveys will be conducted and, if this species is detected, mitigation measures will be implemented
Side-flowering skullcap <i>Scutellaria lateriflora</i>	--/--/2B.2	Found in marsh and swamp, meadow and seep, and wetland habitats.	Unlikely – appropriate habitat is present within the project area, but the species was not detected during a cursory survey.	Unlikely – pre-project surveys will be conducted and, if this species is detected, mitigation measures will be implemented
Keck's checkerbloom <i>Sidalcea keckii</i>	E/--/--/1B.1	Serpentine clay soils in cismontane woodland, valley and foothill grassland. Known historically from occurrences in Fresno, Merced, and Tulare counties; similar plants from Inner North Coast Ranges in Colusa, Napa, Solano, and Yolo counties treated as this species till further studies done.	None – no appropriate habitat within the project area.	None.
Suisun Marsh Aster <i>Symphotrichum lentum</i>	--/--/1B.2	Found in brackish marsh, freshwater marsh, marsh and swamp, and wetland habitats.	Present – found along waterways within project area during a cursory survey.	Likely – mitigation measures will be implemented to reduce the impacts to this species to the extent practicable.
Solano Grass <i>Tuctoria mucronata</i>	E/E/--/1B.1	Vernal pools, mesic grassland; 16-33 ft. Southwestern Sacramento Valley in Solano and Yolo counties.	None – no appropriate habitat within the project area.	None.
Crampton's tuctoria <i>Tuctoria mucronata</i>	E/E/--/1B.1	Found in valley and foothill grassland, vernal pool and wetland habitats.	None – no appropriate habitat within the project area.	None.
Saline clover <i>Trifolium hydrophilum</i>	--/--/1B.2	Salt marsh, mesic alkaline areas in valley and foothill grasslands, vernal pools, marshes and swamps; below 984 ft. Sacramento Valley, central Western CA.	None – no appropriate habitat within the project area.	None.

STATUS¹

E = listed as endangered under the federal or State Endangered Species Act

T = listed as threatened under the federal or State Endangered Species Act

SC = species of concern

X = Critical habitat designation

C = candidate species

D = delisted

CNPS = CA Native Plant Society Listing

Discussion

- a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS?

Less than Significant with Mitigation. The project will not have a substantial adverse effect on any sensitive species. Mitigation measures described below have been proposed to bring impacts to less than significant.

Special-Status Species

Sensitive biological resources include animals, plants, and habitats that have been afforded special recognition by federal, State, or local resource agencies and organizations. Also included are habitats that are of relatively limited distribution or are of particular value to wildlife. Species' ranges and habitat requirements were compared with the project boundaries and available habitat in the project area to determine if the species has potential to be found in the area. If potential habitat is present or the species was actually found during surveys, potential impacts due to the project were assessed and mitigation measures are provided below.

General Biological Mitigation Measures

BIO 1: Pre-construction Survey. Pre-construction surveys for protected species will be performed no more than 48 hours prior to the mobilization of equipment to the site.

A pre-construction survey for Western Pond Turtles will be conducted immediately prior to construction. If a Western Pond Turtle is identified within the work zone, work will not proceed until the turtle has moved, on its own, out of the work zone.

Pre-construction surveys will be conducted prior to mobilization to the site by a qualified biologist for the presence of Giant Gartersnakes (GGS) and their habitat. The biologist will inspect construction-related activities within the project area to assure that mitigation measures are being performed as required. The project area shall be re-inspected by a qualified biologist whenever a lapse in construction activity of 2 weeks or greater has occurred. If GGS are encountered during construction activities, the biologist will notify the USFWS immediately to determine the appropriate procedures related to the collection and relocation of the snake. A report will be submitted, including date(s), location(s), habitat description, and any corrective measures taken to protect the snake, within one (1) business day. The biologist will be required to report any take of listed species to the USFWS immediately by telephone and by electronic mail or written letter within one (1) working day of the incident.

BIO 2: Protection of Listed Species. If DWR encounters a fully protected or listed animal species while performing work, DWR shall suspend all work until the fully protected or listed animal species has left the work area. DWR shall notify the appropriate agencies of all confirmed observations of any fully protected or listed species in or adjacent to any work area covered by this Agreement.

BIO 3: Environmental Awareness Training. A Worker Environmental Awareness Training Program for construction personnel shall be conducted by a qualified biologist for all construction workers, including sub-contractors, prior to the commencement of construction activities. The program shall consist of a presentation made by a qualified biologist that includes information about the distribution and habitat needs of any special status species that may be present, legal protections for those species, penalties for violations and project-specific protective measures included in this document.

BIO 4: Biological Monitor. A biological monitor will be available as necessary to monitor construction activities. DWR will follow all conditions required by USFWS during consultation for ESA as well as other resource agency recommendations.

BIO 5: Post-construction Restoration. After completion of construction activities, the applicant will remove any temporary fill and construction debris and, wherever feasible, restore disturbed areas to pre-project conditions. Habitat restoration work will include planting cuttings or saplings of native trees to replace those that are removed, and hydroseeding with native grasses and forbs to reduce erosion.

Invertebrates

Valley Elderberry Longhorn Beetle

Valley elderberry longhorn beetle (VELB) is a medium-sized (2 cm long) beetle that is endemic to the Central Valley of California. The beetle is found only in association with its host plant, elderberry (*Sambucus* spp.) within riparian habitat. Adults feed on the foliage and perhaps flowers and are present from March through early June. During this period the beetles mate, and females lay eggs on living elderberry plants. The first instar larvae bore to the center of elderberry stems where they develop for one to two years feeding on pith.

A survey for elderberry shrubs was conducted in November 2013 by CDFW and DWR environmental scientists. Four shrubs were identified along the access road that will be used for the project; however, there are no shrubs found within the extent of actual levee site repairs. Inspection of the elderberry shrubs within the project area did not detect any evidence of VELB colonization. Despite this, the cryptic nature of this species as well as the known presence of elderberry shrubs in the project vicinity make it difficult to reach a conclusion supporting absence of the species.

USFWS has determined that if suitable habitat for the beetle occurs on the project site or within close proximity where beetles will be affected by the project, these areas must be designated as avoidance areas and must be protected from disturbance during the construction and operation of the project. When possible, projects should be designed such that avoidance areas are connected with adjacent habitat to prevent fragmentation and isolation of beetle populations. The project is not likely to adversely affect VELB if the following mitigation measures are followed.

Mitigation Measures for VELB

BIO 7: Fencing of Elderberry Shrubs. Fencing and/or flagging will be used to identify exclusion areas around elderberry shrubs that will be avoided by construction personnel and equipment.

Fish

As part of ongoing monitoring related to impacts of Delta water exports by DWR and the Bureau of Reclamation, fisheries monitoring is carried out annually by the Interagency Ecological Program (IEP). The USFWS Breach III study and the CDFW 20mm Survey, Summer Towntown Survey, Midwater Trawl Survey, and Spring Kodiak Trawl Survey sample locations near Miner Slough and provide useful fish distribution information for determining which fish species occur in the vicinity of the project site. According to data generated by these and other sampling efforts, a number of special-status fish species have potential to occur in the vicinity of the project site during various times of the year and may be affected by the project.

Special-status fish species generally have the potential to be affected by the project in three ways:

1) Direct impacts from construction activities have the potential to physically harm or kill fish within close proximity to the construction site.

Levee repair activities could cause harm to fish in close proximity to the construction site. Direct impacts include mortality from construction equipment, vibrations, or falling debris.

2) Indirect impacts from construction activities have the potential to affect the growth, survival, and reproduction of fish close to the construction site.

Levee repair activities could indirectly harm fish by means of increased sedimentation, habitat degradation, or movement disruption. Sediment released into Miner Slough could result in indirect impacts on resident fish through gill damage and reduced capacity to take in oxygen. Construction related noises could impact resident fish by disrupting their normal migratory or diel movement. All of these impacts could cause reduced fitness as a result of decreased dissolved oxygen (DO) intake ability, increased metabolic costs associated with reduced DO intake ability, and reduced foraging ability due to visibility.

3) Impacts from construction related activities have the potential to affect fish spawning, rearing, or foraging habitat in close proximity to the construction site.

Levee repair activities, including vegetation removal and levee armoring, could impact fish by releasing debris into Miner Slough. Debris may temporarily impact the spawning, rearing, or foraging habitat of fish by degrading the natural habitat.

The potential effects to special-status fish species are further discussed in this section and mitigation measures are provided at the end of the section.

Delta Smelt

Delta Smelt are endemic to the Sacramento-San Joaquin Delta, occurring primarily below Isleton on the Sacramento River and below Mossdale on the San Joaquin River (Moyle 2002). They are tolerant of a wide range of salinities, but adults are mostly found in water of 2-7 parts per thousand (ppt) salinity; however, spawning and rearing mostly occurs in freshwater. Delta Smelt are unlikely to occur in Miner Slough because turbidity levels are too low.

Delta Smelt typically rear in shallow (<3m), open waters of the Delta, San Pablo Bay, Suisun Bay, and Suisun Marsh where they prey on zooplankton, primarily copepods, cladocerans, and amphipods (Moyle 2002). Spawning migrations begin in September or October when Delta Smelt move to the upper portions of the Delta where they spawn between February and July. Delta Smelt spawn in sloughs and shallow edge habitats in the upper Delta, in the Sacramento River above Rio Vista, Montezuma Slough near Suisun Bay, lower Napa River, and possibly Suisun Slough in Suisun Marsh (Moyle 2002).

Construction activities associated with repairing the levee have the potential to directly and indirectly affect Delta Smelt and Critical Habitat for the species. Sediment and debris released into Miner Slough caused by earth moving activities below the high tide line has the potential to disrupt Delta Smelt feeding activities in the vicinity of the project. Mitigation measures provided below will help avoid and minimize impacts to Delta Smelt to less than significant.

Longfin Smelt

Longfin Smelt is an estuarine species occurring in the San Francisco Estuary, including the Delta, as well as other estuaries along coastal Northern California. The distribution of Longfin Smelt depends on salinity and water temperature, as well as on the life stage of individual fish. A strong positive correlation has been established between Delta outflow and Longfin Smelt abundance the following year (Moyle 2002).

Construction activities associated with the levee repair have the potential to directly and indirectly affect Longfin Smelt; however, it is highly unlikely that the project would have impacts on Longfin Smelt because the species does not normally occur in the vicinity of the project when construction will be taking place. However, sediment and debris released into Miner Slough caused by earth moving activities below the high tide line has the potential to disrupt Longfin Smelt feeding activities in the vicinity of the project. However, Longfin Smelt are only use freshwater to spawn, which occurs well outside of the construction window. Mitigation measures provided below will help avoid and minimize impacts to Longfin Smelt and other special-status fish species and reduce the impacts to less than significant.

Chinook Salmon

The distribution of Chinook Salmon in the Pacific Ocean depends upon ocean temperatures and, off the coast of North America, is generally from Kotzebue Sound, Alaska to south of Monterey Bay, California. Spawning runs of anadromous Chinook Salmon are distributed along the North Coast of California in various rivers, with the southernmost spawning populations in the San Joaquin and Kings rivers of the Central Valley (Moyle 2002).

There are four distinct runs of Chinook Salmon in the Central Valley, all of which spend part of their life cycle in the Delta: Sacramento River winter-run Chinook Salmon, Central Valley spring-run Chinook Salmon, Central Valley fall-run Chinook Salmon, and Central Valley late-fall-run Chinook Salmon. Adults of all four runs pass through the Delta on their upstream spawning migrations and juveniles spend varying amounts of time rearing in the Delta. The USFWS Juvenile Fish Monitoring Program monitors juvenile outmigration throughout the Delta, and while Miner Slough is not a sampling site of that program, it is believed that both adult and juvenile salmon may use it as a migratory corridor.

In addition to being located in designated Critical Habitat for the listed runs of Chinook Salmon, the aquatic habitat surrounding the project site is also considered Essential Fish Habitat for all runs of Chinook Salmon. Projects proposed within Essential Fish Habitat (EFH) that are permitted, funded, or undertaken by a Federal Agency are also regulated by NOAA Fisheries. Essential Fish Habitat as defined in the Magnuson-Stevens Fishery Conservation and Management Act as "...those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity."

Sacramento River Winter-run Chinook Salmon

Winter-run Chinook Salmon are unique to the Sacramento River. They typically migrate upstream in winter and spring as immature fish and then spawn in early summer. Presently, their spawning habitat is restricted to the Sacramento River below Shasta Reservoir, where hypolimnetic releases are used to maintain river temperatures of 10 to 15°C. Juveniles spend 5 to 10 months in streams followed by an intermediate period in the San Francisco estuary, including the Delta (Moyle 2002).

Construction activities associated with levee repair have the potential to directly and indirectly affect winter-run Chinook Salmon and Critical Habitat for the species. Sediment and debris released into Miner Slough caused by earth moving activities below the high tide line has the potential to disrupt winter-run Chinook Salmon feeding activities in the vicinity of the project. Noise related to construction also has the potential to disrupt the natural migration or diel movement of winter-run Chinook Salmon. However, no adverse effects are anticipated from construction because the peak of winter-run Chinook Salmon emigration through the Delta is generally January through April and in-water construction activities will take place between August 1 and November 30. In addition, mitigation measures provided below will help avoid and minimize impacts to winter-run Chinook Salmon to a less than significant level.

Central Valley Spring-run Chinook Salmon

Spring-run Chinook Salmon enter the San Francisco Bay in spring or early summer as immature fish and migrate to tributaries of the Sacramento River, where they hold in deep, cold pools for several months prior to spawning in early fall. Juveniles typically rear in streams for 3 to 15 months before moving downstream, primarily as smolt that move rapidly through the Delta (Moyle 2002). Historically, spring-run Chinook Salmon migrated far upstream in larger tributaries of the Sacramento and San Joaquin rivers. Due to dam construction, however, spring-run Chinook were eliminated from the San Joaquin River drainage and their spawning populations were greatly reduced in the Sacramento River drainage.

Construction activities associated with levee repair have the potential to directly and indirectly affect spring-run Chinook Salmon and Critical Habitat for the species. Sediment and debris released into Miner Slough caused by earth moving activities below the high tide line has the potential to disrupt spring-run Chinook Salmon feeding activities in the vicinity of the project. Noise related to construction also has the potential to disrupt the natural migration or diel movement of spring-run Chinook Salmon. However, no adverse effects are anticipated from construction because spring-run Chinook Salmon emigration through the Delta is generally considered to end by June and in-water construction activities will take place between August 1 and November 30. In addition, mitigation measures provided below will help avoid and minimize impacts to spring-run Chinook Salmon to a less than significant level.

Central Valley Fall-run Chinook Salmon

Fall-run Chinook Salmon migrate from the ocean in late summer and early fall as mature fish and spawn within days or weeks of reaching their spawning grounds in the lowland reaches of larger rivers and their tributaries (Moyle 2002). Juveniles emerge from gravel in spring and move downstream within a few months to rear in mainstem rivers or estuaries. Central Valley fall-run Chinook Salmon have the longest rearing period of the four Chinook Salmon runs in the Central Valley (Moyle 2002). The fall run is currently the most abundant Chinook Salmon run in the Central Valley. Currently, fall-run Chinook in the Sacramento and San Joaquin rivers are supplemented by hatcheries on Battle Creek and the Feather, American, Mokelumne, and Merced rivers.

Construction activities associated with levee repair have the potential to directly and indirectly affect fall-run Chinook Salmon and Critical Habitat for the species. Sediment and debris released into Miner Slough caused by earth moving activities below the high tide line has the potential to disrupt fall-run Chinook Salmon feeding activities in the vicinity of the project. Noise related to construction also has the potential to disrupt the natural migration or diel movement of fall-run Chinook Salmon. However, the project is expected to cause less than significant impacts to fall-run Chinook Salmon because in-water construction activities will take place within the in-channel work window of August 1 through November 30 designated by NOAA Fisheries as a period when fall-run Chinook Salmon are least vulnerable to in-channel activities. In addition, mitigation measures provided below will help avoid and minimize impacts to fall-run Chinook Salmon to a less than significant level.

Central Valley Late-fall-run Chinook Salmon

Late-fall run Chinook Salmon typically migrate upstream from the ocean from October through February and hold for 1 to 03 months prior to spawning in January through March (Moyle et al. 1995). Juveniles spend 7 to 13 months in freshwater prior to outmigration. The late-fall run was not recognized as distinct from the fall run until Red Bluff Diversion Dam was built on the Sacramento River in 1966, consequently there are no historic abundance data on late-fall-run Chinook Salmon prior to counts beginning in 1967 at the dam's fish ladders. No reliable run-size estimates are available since 1994 because the gates of the dam have been left open during the migration period to allow free passage. Late-fall-run Chinook are listed by CDFW as a Species of Special Concern and are considered by NMFS, as part of a single Evolutionary Significant Unit (ESU) with fall-run Chinook, to be a species of concern. The CALFED Bay-Delta Program considers Central Valley late-fall-run Chinook Salmon to be a species in need of "recovery".

Construction activities associated with levee repair have the potential to directly and indirectly affect late-fall-run Chinook Salmon and Critical Habitat for the species. Sediment and debris released into Miner Slough caused by earth moving activities below the high tide line has the potential to disrupt late-fall-run Chinook Salmon feeding activities in the vicinity of the project. Noise related to construction also has the potential to disrupt the natural migration or diel movement of late fall-run Chinook Salmon. However, the project is expected to cause less than significant impacts to late fall-run Chinook Salmon because in-water construction activities will take place within the in-channel work window of August 1 through November 30 designated by NOAA Fisheries as a period when late-fall-run Chinook Salmon are least vulnerable to in-channel activities. In addition, mitigation measures provided below will help avoid and minimize impacts to late fall-run Chinook Salmon to a less than significant level.

Central Valley Steelhead

Steelhead are the anadromous, or migratory, form of coastal rainbow trout (*Oncorhynchus mykiss irideus*), which have extremely variable and flexible life history patterns. Steelhead are not considered to be taxonomically distinct from populations of non-anadromous Rainbow Trout with which they co-occur, but rather they share a common gene pool and are capable of interbreeding.

Construction activities associated with levee repair have the potential to directly and indirectly affect Central Valley steelhead and Critical Habitat for the species. Sediment and debris released into Miner Slough by earth moving activities below the high tide line has the potential to disrupt steelhead feeding activities in the vicinity of the project. Noise related to construction also has the potential to disrupt the natural migration or diel movement of steelhead. However, the project is expected to have less than significant construction impacts to steelhead because in-water construction activities will take place within the in-channel work window of August 1 through November 30 designated by NOAA Fisheries as a period when steelhead are least vulnerable to in-channel activities. In addition, mitigation measures provided below will help avoid and minimize impacts to steelhead to a less than significant level.

Sacramento Splittail

Sacramento Splittail are endemic to the Central Valley and San Francisco Estuary. They were once distributed as far south as Friant, but their current breeding range appears to be much more restricted in the San Joaquin River. In the Sacramento River, they have recently been observed as far upstream as Red Bluff Diversion Dam; however, the upstream extent of their spawning migrations is unknown (Feyrer et al. 2005). When flooded, the Yolo Bypass may provide important spawning and rearing habitat suggesting that Miner Slough may at times be used as rearing habitat for splittail (Moyle 2002). When they are not spawning, splittail are often most abundant in sloughs of Suisun Marsh and the northern portion of the Delta. The CDFW 20 mm survey regularly catches larval splittail in Miner Slough and throughout the Cache Slough Complex.

Construction activities associated with levee repair have the potential to directly and indirectly affect Sacramento Splittail. Sediment and debris released into Miner Slough by earth moving activities below the high tide line has the potential to disrupt splittail feeding activities in the vicinity of the project. Noise related to construction also has the potential to disrupt the natural migration or diel movement of Sacramento Splittail. However, the project is expected to cause less than significant impacts to splittail because in-water construction activities will take place when splittail are considered least vulnerable to in-channel activities. In addition, mitigation measures provided below will help avoid and minimize impacts to splittail to a less than significant level.

Green Sturgeon

Green Sturgeon is an anadromous species that primarily inhabits estuarine and coastal waters, but migrates into freshwater to spawn. In North America, the species occurs in rivers from British Columbia south to the Sacramento River and in the Pacific Ocean from the Bering Sea to Baja California, Mexico (Moyle 2002). Currently in California, Green sturgeons spawn in the Klamath, Trinity, and Sacramento Rivers. Preferred spawning habitat is often characterized by deep, swiftly flowing water over substrate of large cobble where eggs are broadcast and fertilized externally.

No impacts to Green Sturgeons are anticipated from construction activities because Green Sturgeons are a benthic species that are not expected to occur in close proximity to the project site. In addition, mitigation measures provided below will help to further avoid and minimize impacts to Green Sturgeon.

River Lamprey

A River Lamprey is a cartilaginous, jawless fish that is only distantly related to bony fishes. It is an anadromous species distributed from coastal streams north of Juneau, Alaska to the San Francisco Estuary and Central Valley (Moyle 2002). Individuals are recovered annually from the State and Federal fish collection facilities in the South Delta. In California, most records are from streams in the lower portion of the Sacramento—San Joaquin River system, but their distribution is poorly understood because they have not been studied extensively.

No impacts to River Lampreys are anticipated from construction activities because construction will not overlap with the adult emigration or juvenile emigration periods. In addition, mitigation measures provided below will help avoid and minimize impacts to River Lampreys.

Pacific Lamprey

Adult Pacific Lampreys are the largest lamprey in California. They are distributed from Japan, through Alaska, and south to Baja California. Like other lampreys in California, Pacific Lampreys are anadromous and spawn in gravelly streams, including tributaries of the San Francisco Estuary and the Central Valley. Adult migration into fresh water occurs primarily between March and late June. There are no surveys that regularly monitor or catch Pacific Lampreys, and it is unknown what the extent of their distribution within Miner Slough is. Because juveniles and larvae rear in silty backwater, it is unlikely that Miner Slough would provide adequate habitat for anything but adult migration (Moyle 2002).

No impacts to Pacific Lampreys are anticipated from construction activities because construction will not overlap with the adult emigration or juvenile emigration periods. In addition, mitigation measures provided below will help avoid and minimize impacts to Pacific Lampreys.

Mitigation Measures for Fish

BIO 8: In-water Work Windows. In-water work will be completed between August 1 through November 30, designated by CDFW as a time period when Delta Smelt, winter-run Chinook Salmon, and spring-run Chinook Salmon are least vulnerable to impacts from in-channel activities (USFWS 2004, DFG 2005a).

BIO 9: Minimization of Turbidity. Work will occur below the mean high water mark. Rock material used for levee repairs shall be clean, hard, rock with no appreciable fines and will be placed below the water line in a manner that limits resuspension of sediments. Turbidity measurements will be taken in accordance with the project's CWA 401 Water Quality Certification. If needed, rock placement methods will be modified, slowed, or suspended in order to comply with the terms and conditions of the Certification.

Amphibians and Reptiles

The project area is within the known range for Western Pond Turtle and Giant Gartersnake.

Western Pond Turtle

The Western pond turtle is a moderate-sized (5 to 8 inch long), drab brown or khaki-colored turtle that lacks prominent markings on its carapace (top of the shell) but regularly possesses a fine, vermiform reticulum of light and dark markings. The western pond turtle is a primarily aquatic species that usually leaves the water to nest, aestivate, and overwinter, although some individuals will overwinter in the water.

Western pond turtles are commonly found throughout the project area. Because the species is shy, turtles may be disturbed off their basking sites when personnel and equipment are nearby, but there is so much available habitat that it is likely they will just move a comfortable distance away and return to basking. Direct impacts could be realized through disturbance of nests, which are nearly impossible to detect.

Giant Gartersnake

Giant Gartersnakes (GGS) inhabit natural and artificial wetlands, including irrigation and drainage canals, rice lands, marshes, sloughs, ponds, small lakes, low gradient streams, and adjacent uplands within their historical range.

The GGS is unlikely to be found within Miner Slough. The slough is tidal with steep levee slopes and will not provide adequate basking sites. It is unlikely that GGS would migrate through Miner Slough as they generally do not use wide tidally influenced rivers or sloughs. The rock slope protection along the levee bank as well as the habitat along the channel does not provide good conditions for cover and escape.

The GGS may occur within Prospect Island adjacent to Miner Slough, although the distribution of GGS in the area is poorly understood. Trapping surveys were conducted for the species in 2009, but GGS was not observed. The following mitigation measures will reduce any potential impacts to GGS to less than significant.

Mitigation Measures for Giant Gartersnake

BIO 10: Active Season Work Window. Construction and ground disturbing activities will be initiated within the snake's active season of May 1 through October 1; however, the applicant is proposing to continue work into the snake's inactive season. Work will be initiated prior to September 15, and ongoing activities are likely to deter snakes from using locations within the project area as brumation sites. Brumation can be loosely equated to hibernation among mammals. All earth-disturbing project activities are expected to be completed no later than November 30.

BIO 11: Vehicle Speeds. Project-related vehicles will observe a 20-mile-per-hour speed limit within construction areas, except on existing paved roads where they will adhere to the posted speed limits.

BIO 12: Erosion and Sedimentation. Best Management Practices (BMPs) will be implemented to minimize the potential for erosion and sedimentation into nearby water bodies.

Mammals

The project area is within the known range of the Western Red Bat and the Hoary Bat.

Western Red Bat

Riparian broadleaf forest in the Central Valley is the primary summer breeding habitat for the western red bat in California (females and pups). Riverside orchards may also be used as maternity roosts. Year-round range spans the Central Valley, Sierra Nevada foothills, Coast Ranges, and coast except Humboldt and Del Norte counties. It has been documented foraging in most habitat types in the Delta as well as roosting documented in the Delta in Brannan Island State Recreation Area. Acoustic monitoring surveys in 2009 for the BDCP EIR/EIS detected western red bat on Prospect Island in spring, summer, and fall.

Mitigation measures provided below will reduce potential impacts to less than significant.

Mitigation Measures for Mammals

BIO 13. If pre-construction surveys find natal roost sites for bats within the work area, DWR shall avoid any work between March 1 and August 15 at specific sites if such work could disturb potential roosting sites for bats. Trees to be removed will be limited to the minimum extent feasible to make levee repairs. Mitigation measures will be established and implemented in coordination with CDFW to avoid impacts to habitat. Mitigation measures may include, but are not limited to, pre-construction surveys by a qualified biologist to determine potential for roosting bats, avoidance of tree removal during the non-volant period to avoid impacts to lactating females and young bats that are unable to fly on their own, and implementation of a staged disturbance strategy to allow roosting bats opportunity to move before a potential roost site is removed.

Birds

The project area is within the known range of several special status bird species. Construction activities will take place outside the active nesting season (April to August) and therefore the project is not likely to have impacts on nesting birds. Mitigation measures provided below will reduce potential impacts to less than significant.

Great Egret and Great Blue Heron

The Great Egret and the Great Blue Heron are colonial nesters and it is their rookeries that are protected by the CFGC. Both species use tall trees for nesting and forage in freshwater and saline marshes, shallow open water, and occasionally cropland or low, open upland habitats, such as pastures.

Both species are known to forage within the project area; however, rookeries have not been documented within the project area. This project is not likely to adversely affect these species because most work will occur outside of the nesting season and nesting colonies have not been documented within the project area.

Black-crowned Night Heron

The Black-crowned Night Heron nests colonially in dense marshes, groves of low trees and dense shrubs; and forages in fresh and saline marshes and in shallow open water at edge of marsh vegetation.

This species is known to forage within the project area; however rookeries have not been documented within the project area. This project is not likely to adversely affect Black-crowned Night Heron because most work will occur outside of the nesting season and nesting colonies have not been documented within the project area.

Double-crested Cormorant

The Double-crested Cormorant breeds colonially in rock ledges and trees. Its breeding range spans the Delta, the coast and offshore islands, Clear Lake, the Salton Sea, the Colorado River, and portions of northeastern California. Its winter range expands to include Central Valley and portions of southern California.

This species is known to forage within the project area; however rookeries have not been documented within the project area. This project is not likely to adversely affect Double-crested Cormorant because most work will occur outside of the nesting season and nesting colonies have not been documented within the project area.

White-faced Ibis

The White-faced Ibis forages in wetlands, irrigated or flooded croplands and pastures; and breeds in dense freshwater marsh. It is a year-round resident in scattered locations in Central Valley and southern California and nests in northeastern California.

This species nests near the project area and may also forage within the project area, but no nesting colonies have been documented within the project area. This project is not likely to adversely affect White-faced Ibis because most work will occur outside of the nesting season and nesting colonies have not been documented within the project area.

Swainson's Hawk

Swainson's Hawk nests in mature trees including oaks or cottonwoods in or near riparian habitat. They forage in grasslands, irrigated pastures and grain fields. Within California, Swainson's hawks begin nesting in late March and young usually leave the nest (fledge) by late July. Swainson's Hawks have been observed within the project area (DWR 2009).

This project is not likely to adversely affect Swainson's Hawk because most work will occur outside of the nesting season, and mitigation measures will be implemented if nesting Swainson's Hawks are found within ¼ mile of the project area.

White-tailed Kite

The White-tailed Kite resides throughout most of California (Small 1994; Dunk 1995). This species is known to occur near the project area where suitable habitat is present. Nesting occurs in trees with dense canopies from February to August. The closest known occurrence of White-tailed Kite is 1.5 miles east of the project area.

This project is not likely to adversely affect White-tailed Kite because most work will occur outside of the nesting season, and mitigation measures will be implemented if nesting White-tailed Kites are found nesting within 500 feet of the project area.

Northern Harrier

The Northern Harrier nests on the ground among herbaceous vegetation, such as grasses or cattails; and forages in grasslands, agricultural fields, and marshes throughout lowland California. This species is known to occur near the project area and may occur where suitable habitat is present within the project area.

This project is not likely to adversely affect Northern Harrier because most work will occur outside of the nesting season, and mitigation measures will be implemented if Northern Harriers are found nesting within 500 feet of the project area.

Yellow-headed Blackbird

The Yellow-headed Blackbird nests in freshwater emergent wetlands with dense vegetation and deep water, often along borders of lakes or ponds. Its breeding range includes primarily the Central Valley, northeastern California, and portions of southern California; but most individuals migrate south in winter. This species is known to nest near the project area and may also forage within the project area. However, nesting habitat within the project area is of poor quality.

This project is not likely to adversely affect Yellow-headed Blackbird because most work will occur outside of the nesting season, and mitigation measures will be implemented if Yellow-headed Blackbird are found nesting within 50 feet of the project area.

Modesto Song Sparrow

The Song Sparrow (*Melospiza melodia*) Modesto population nests and forages primarily in emergent marsh, riparian scrub, and early successional riparian forest habitats, and infrequently in mature riparian forest and sparsely vegetated ditches and levees. Its year-round range includes the Delta east of Suisun Marsh and northern Sacramento-San Joaquin Valley. Song Sparrows were documented at Prospect Island during DHCCP surveys (DWR 2009).

This project is not likely to adversely affect Modesto Song Sparrow because most work will occur outside of the nesting season.

Mitigation Measures for Birds

BIO 14. If construction takes place during the active nesting season (April 1 through August 31), a qualified biologist will conduct preconstruction surveys prior to the start of construction to locate all active migratory bird nests within 250 feet, active raptor nests within 500 feet and all active Swainson's Hawk nests within ¼ mile of construction areas. If nests are located, impacts shall be minimized by establishing appropriate non-disturbance buffer zones in consultation with DFW and monitoring nests to ensure that nests are not jeopardized.

BIO 15. If Swainson's Hawks are found nesting within ¼ mile of the proposed project, a qualified biologist will conduct a risk assessment and consult CDFW to develop and implement appropriate avoidance and minimization measures. This may include monitoring of nests by a qualified biologist and suspension of work if Swainson's Hawk nests are at risk of disturbance.

Special-Status Plant Species

Special-status plant species were identified in the CNDDDB and CNPS searches as occurring in the project vicinity. Several species are not likely to occur because habitats are not present within the project area, such as mesic areas (vernal pools) and/or in alkaline soils, and valley and foothill grassland habitats. Other species have potential habitat in the project area but were not found during surveys. Only two species (Suisun Marsh Aster and Northern California Black

Walnut) were identified as occurring in the project area. Both species were observed during along the levee field surveys in the fall of 2013.

Suisun Marsh Aster

Suisun Marsh Aster, a perennial rhizomatous herb, is found in marshes and swamps. The blooming period is typically May-November (CNPS 2013). Suisun Marsh aster occurs at the upper margin and immediately above the tidal zones of fresh and brackish marshes and along rivers and creeks. Since this plant is known to occur near the project area, avoidance and minimization measures will be implemented on the levee; however, loss of individuals may be unavoidable. Based on local abundance of this plant species and the proximity of other individuals, impacts to the populations would be less than significant.

Northern California Black Walnut

Northern California Black Walnut may be found along riparian areas within the project area. However, individuals in this area are not considered to be part of the historical populations and are likely of hybrid origin. No mitigation is proposed.

Mitigation Measures for Plants

BIO 16. A botanist will conduct pre-construction surveys for rare plants prior to construction activities. If any are identified, DWR scientists will flag the areas. Plants will be avoided as much as possible. Those plants that may be impacted by project activities will be moved to an alternate site along the levee.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies or regulations or by the CDFW or USFWS?

Less than Significant with Mitigation. Individual trees within riparian habitat will be impacted during project activities. Other sensitive natural habitat will not be impacted during project activities. Mitigation measures provided below have been proposed to bring impacts to less than significant.

Native Trees

Native riparian trees would be preserved to the greatest extent possible at each of the erosion sites. However, tree trimming and limited tree removal may be necessary for access, equipment maneuverability, safety, or preservation of tree health. It is anticipated that approximately 20 trees will be removed from the project site. Unnecessary tree removal, improper trimming, and inadequate tree protection prior to placement of revetment would result in direct effects on tree resources, which would be considered significant. Implementation of mitigation measures would reduce impacts to a less-than-significant level.

Mitigation Measures for Native and other Trees

BIO 17. All trees within the construction easement that are greater than 4 inches diameter at breast height (DBH) shall be retained to the greatest extent practicable. Tree removal shall be limited to situations where access, required equipment maneuverability, worker/public safety, and levee integrity are not reasonably possible without removal of trees. Trees that are removed for project activities will be chipped and materials will be placed in upland locations along the levee for future use onsite by DWR.

BIO 18. All trees that are to be retained and that occur within the footprint of the repairs shall be trimmed of any branches that would interfere with installation of protective materials (e.g., burlap).

BIO 19. All trees that are to be retained within the footprint of the repairs shall be protected by wrapping the trunks with protective materials (e.g., burlap and wood) prior to placement of revetment. Tree protection measures shall be clearly illustrated in the construction plans.

BIO 20. Construction staging and operation of vehicles/heavy equipment within the drip line of native trees that are located outside of the repair footprints shall be avoided to the greatest extent practicable.

BIO 21. Trees 4" DBH or larger to be removed shall be replaced at a 3:1 ratio at mitigation sites along the Miner Slough levee at a site at the discretion of DWR. DWR will comply with the CDFW Streambed Alteration Agreement for tree mitigation.

c) Have a substantial adverse effect on federally protected wetlands as defined by section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less than Significant. The project activities fall within wetlands and other Waters of the US under US Army Corps of Engineers jurisdiction through section 404 of the Clean Water Act and section 10 of the Rivers and Harbors Act.

The project will affect a total linear distance of 1294 feet within a 3-mile section of Prospect Island levee along Miner Slough. This repair work will require fill of 0.04 acres of jurisdictional wetlands and 0.41 acres of other Waters of the U.S.

The impacts to jurisdictional wetlands are considered to be permanent; however, with time, deposition of sediment between the rock slope protection will allow colonization of wetland plants. The effect of adding the replacement fill of rock slope protection to the areas of Waters of the U.S. below the MHW mark will have a temporary and minimal adverse effect on the aquatic environment. No mitigation is proposed for impacts to Waters of the U.S., including wetlands; however, the project includes restoration of riparian vegetation at the impacted sites.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less than Significant. DWR does not anticipate impacts to fish or wildlife species and has designed the project to avoid potential impacts and will also implement specific mitigation measures to avoid and minimize potential impacts to wildlife species. The project has been scheduled to occur when fish and wildlife species are less likely to occur in the project area. Potential impacts due to the project were assessed and mitigation measures are provided in the sensitive species section.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact. The project activities will not conflict with any local policies or ordinances protecting biological resources. The Solano County HCP is in Final Admin Draft. The project falls within the covered activity zones of the plan, but will not conflict with the plan.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?

No Impact. The project activities will not conflict with the provisions of an adopted HCP, NCCP, or other conservation plan.

V. Cultural Resources

Would the project:	Potential Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in '15064.5?		X		
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to '15064.5?		X		
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				X
d) Disturb any human remains, including those interred outside of formal cemeteries?				X

Environmental Setting

The term “cultural resources” as used in this document refers to all “built environment” resources (structures, bridges, levees, etc.), culturally important resources (sacred places and locations associated with traditional activities), and archaeological resources (both prehistoric and historic, on land and submerged), regardless of significance.

CEQA requires that public agencies that finance or approve public or private projects must assess the effects of the project on cultural resources (CEQA Guidelines §15064.5). Cultural resource is a general term that encompasses CEQA’s definition of historical resources (PRC §21084.1) and unique archaeological resources (PRC §21083.2). CEQA requires that alternative plans or mitigation measures must be considered if a project would result in significant effects on important cultural resources. Only significant cultural resources, however; need to be addressed (CEQA Guidelines 15064.5 [a][3]). Therefore, prior to the development of mitigation measures, the significance of cultural resources with the potential to be impacted by the project must be determined.

The National Historic Preservation Act (NHPA) of 1966, as amended, sets forth national policy and procedures for historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for listing in the National Register of Historic Places. Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties and to allow the Advisory Council on Historic Preservation the opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation [36 Code of Federal Regulations (CFR) 800].

Discussion

Three cultural resource studies have been conducted on land in the study area and one adjacent and inland to the study area. The most recent survey in the proposed project area was performed in May 2012 by Parus Consulting. The 2012 study included an archival records search at the Northwest Information Center of the California Historical Resources Information System at Sonoma State University, and a Sacred Lands search performed in cooperation with the Native American Heritage Commission. A surface survey was conducted across the entire Prospect Island, although much of it was inundated at the time. The 2012 archaeological study results identified no prehistoric or historic properties in the project’s area of potential effect (APE). An updated record search was ordered on September 30, 2013 by DWR with the same results. As the levee repair project may have in-water effects a California State Lands Commission (SLC) shipwreck search was requested on August 27, 2013.

Current research results are discussed apart from this document, in a confidential archaeological survey report.

a) Would the project cause a substantial adverse change in the significance of a historical resource as defined in '15064.5?

Less than significant with mitigation. The levee itself was evaluated for historical significance and found to be ineligible for listing in the NRHP and the CRHR. The State Historic Preservation Office (SHPO) concurred with the findings in a letter dated July 22, 2008 to the Bureau of Reclamation, Mid-Pacific Regional Office. While it is the SHPO’s opinion that the Sacramento/San Joaquin Delta levee and flood control system in the future may be found eligible as a NRHP district, the Prospect Island levee system would not be a contributor to such a district.

The SLC shipwreck search resulted in the identification of two potential shipwrecks in or near the project area, a steamship *Zinfandel* and a schooner, *Goliath*. After conducting archival research, the *Goliath* appears to be well out of the

project area. However, research indicates there is still potential for the wreck of the *Zinfandel* to be in the project area. A maritime archaeologist is being contracted to conduct a survey to identify and evaluate submerged resources.

b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to '15064.5?

Less than significant with mitigation. No archaeological resources are known to exist in or around the project site. The probability that project implementation could impact buried archaeological deposits is considered to be low, given that the majority of the area has historically been marshland and largely unsuitable for human habitation. Furthermore, the levee is a built structure and project impacts will be restricted to the top and waterside of the levee and over the water. However, any area near a permanent water source could be sensitive for prehistoric archaeology and it is not known if the repair work could penetrate into non-levee natural sediments.

c) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

No Impact. The project site is located in Holocene aged sediments which formed after the end of the last glacial maximum. Project activities will not extend past the Holocene alluvium into older sediments. Thus, there is no possibility of the presence of paleontological resources. The site is also located in an area that is similar geologically to the surrounding area and is not unique geologically.

d) Would the project disturb any human remains, including those interred outside of formal cemeteries?

No Impact. It is not anticipated that project implementation would disturb any human remains, included those interred outside of formal cemeteries.

Mitigation Measures for Cultural Resources

CUL 1. If the potential historically significant shipwreck that was recorded in Miner Slough is found within the project area, an area of exclusion will be created around the shipwreck(s) so that it will not be impacted by project activities. The exclusion area will be marked on a navigation chart and given to the barge operator so the construction and staging barges will not float or work over the exclusion area.

CUL 2. If historical or unique archaeological resources are incidentally discovered during construction, provisions will be made for a qualified archaeologist to immediately evaluate the find. Work may continue on other parts of the project while evaluation and mitigation takes place (CEQA Guidelines §15064.5 [f]). If the find is determined to be an historical or unique archaeological resource, time allotment sufficient to allow for implementation of avoidance measures or appropriate mitigation must be available.

CUL 3. If human remains are found, such remains are subject to the provisions of California Public Resources Health and Safety Code Section 7050.5-7055. The requirements and procedures would be implemented, including immediately stopping work in the vicinity of the find and notification of the County Coroner. The process for notification of the California Native American Heritage Commission (NAHC) and consultation with the individual(s) identified by the NAHC as the "most likely descendent" is set forth in Section 5097.98 of the California Public Resources Code. Work can restart after the remains have been investigated and appropriate recommendations have been made for the treatment and disposition of the remains.

VI. Geology and Soils

Would the project:	Potential Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				X
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				X
ii) Strong seismic ground shaking?				X
iii) Seismic-related ground failure, including liquefaction?				X
iv) Landslides?				X
b) Result in substantial soil erosion or the loss of topsoil?				X
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?				X
d) Located on expansive soil, defined in Table 18-1-B of the Uniform Building Code (94), create substantial risks to life or property?				X
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				X

Environmental Setting

Based on DWR geotechnical explorations in 2011-12, Prospect and Ryer Island are underlain by variable thicknesses of the following informally defined geologic units: Levee, Upper Clay, and Main Sand. The levee unit is present along both sides of Miner Slough, but is significantly lower in elevation along Prospect Island, since Prospect Island and Miner Slough are part of the Yolo Bypass Flood Control System. Along Prospect Island, the Levee unit ranges in thickness from 11 to 16 feet. The levees contain a mixture of soil types ranging from clay to sand. In general, the entire Prospect Island-Miner Slough levee is moderately to poorly engineered and has failed numerous times during past high-flow storm events; most recently in 2006 (Hopf, 2011).

The Upper Clay unit is present below the levee repair sites at depths of about 11 to 16 feet and extends to depths ranging from 36 to 65 feet; this unit, which consists of mostly lean clay (low to medium plasticity) with some fat clay (high plasticity), appears to have the greatest thickness in the northern portions of Prospect Island. The Main Sand unit is present below the levee repair sites at depths of about 36 to 65 feet and extends to depths ranging from 65 to 81 feet.

Discussion

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving i) through iv):

No impact. This project area does not fall within an Alquist-Priolo Earthquake Fault Zone, Seismic Hazard Mapping Act Zone, or Landslide Hazard Map Zone, as shown on the California Geological Survey seismic hazard online mapping system at: <http://www.quake.ca.gov/gmaps/WH/regulatorymaps.htm>.

b) Result in substantial soil erosion or the loss of topsoil?

No impact. Soils in the project area are mostly fine grained (silt and clay) with some areas of silty sand. The levee repair project is short-term in nature, will occur during the late summer and fall dry seasons, and therefore, soil erosion or loss of topsoil is not expected to be a problem.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

No impact. Currently, there are identified areas of the Miner Slough levee that are in critical condition and in need of remediation to improve their integrity. The purpose of the proposed project is to remediate zones of the levee that have been identified to be in the most critical condition. Implementation of this short-term project will improve the overall integrity of the levee and, therefore, no impacts due to project-induced landslides, lateral spreading, subsidence, liquefaction, or collapse are likely to occur.

d) Located on expansive soil, defined in Table 18-1-B of the Uniform Building Code (94), create substantial risks to life or property?

No impact. Soils in the project area are mostly fine grained (silt and clay) with some areas of silty sand. Expansive soils may be encountered within the project area; however, these are existing soils, and repair of the levee will not increase the risk to life or property created by their presence.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

No impact. The proposed project does not involve the use of septic tanks or alternative waste water disposal systems. Therefore, no impacts would result with implementation of the proposed project.

VII. Greenhouse Gas Emissions

Would the Project:	Potential Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?		X		
b) Conflict with applicable plans, policies, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?		X		

Environmental Setting

In May 2012, DWR adopted the DWR Climate Action Plan-Phase I: Greenhouse Gas Emissions Reduction Plan (GGERP), which details DWR’s efforts to reduce its greenhouse gas (GHG) emissions consistent with Executive Order S-3-05 and the Global Warming Solutions Act of 2006 (Assembly Bill (AB) 32). DWR also adopted the Initial Study/Negative Declaration prepared for the GGERP in accordance with the CEQA Guidelines review and public process. The GGERP provides estimates of historical (back to 1990), current, and future GHG emissions related to operations, construction, maintenance, and business practices (e.g. building-related energy use). The GGERP specifies aggressive 2020 and 2050 emission reduction goals and identifies a list of GHG emissions reduction measures to achieve these goals.

DWR specifically prepared its GGERP as a “Plan for the Reduction of Greenhouse Gas Emissions” for purposes of CEQA Guidelines section 15183.5. That section provides that such a document, which must meet certain specified requirements, “may be used in the cumulative impacts analysis of later projects.” Because global climate change, by its very nature, is a global cumulative impact, an individual project’s compliance with a qualifying GHG Reduction Plan may suffice to mitigate the project’s incremental contribution to that cumulative impact to a level that is not “cumulatively considerable.” (See CEQA Guidelines, § 15064, subd. (h)(3).)

More specifically, “[l]ater project-specific environmental documents may tier from and/or incorporate by reference” the “programmatic review” conducted for the GHG emissions reduction plan. “An environmental document that relies on a greenhouse gas reduction plan for a cumulative impacts analysis must identify those requirements specified in the plan that apply to the project, and, if those requirements are not otherwise binding and enforceable, incorporate those requirements as mitigation measures applicable to the project.” (CEQA Guidelines § 15183.5, subd. (b)(2).)

Section 12 of the GGERP outlines the steps that each DWR project will take to demonstrate consistency with the GGERP. These steps include: 1) analysis of GHG emissions from construction of the proposed project, 2) determination that the construction emissions from the project do not exceed the levels of construction emissions analyzed in the GGERP, 3) incorporation into the design of the project DWR’s project level GHG emissions reduction strategies, 4) determination that the project does not conflict with DWR’s ability to implement any of the “Specific Action” GHG emissions reduction measures identified in the GGERP, and 5) determination that the project would not add electricity demands to the State Water Project (SWP) system that could alter DWR’s emissions reduction trajectory in such a way as to impede its ability to meet its emissions reduction goals.

Consistent with these requirements, a GGERP Consistency Determination Checklist is attached documenting that the project has met each of the required elements.

Discussion

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less than Significant. The project is consistent with the Department’s GGERP and will not have a significant impact on the environment.

b) Conflict with applicable plans, policies, or regulations adopted for the purpose of reducing the emissions of greenhouse gases?

Less than Significant. The Project is consistent with the DWR's GGERP and no other plans designed to reduce GHG emissions apply to the Project

Cumulative Impacts

Based on the analysis provided in the GGERP and the demonstration that the proposed project is consistent with DWR's GGERP, DWR (as the lead agency) has determined that the proposed project's incremental contribution to the cumulative impact of increasing atmospheric levels of GHGs is less than cumulatively considerable and, therefore, less than significant.

Best Management Practices to Reduce Greenhouse Gas Emissions

The following Best Management Practices from the Department's GGERP will be implemented to minimize the emissions from this project:

GHG 1. Minimize idling time by requiring that equipment be shut down after five minutes when not in use (as required by the State airborne toxics control measure.

GHG 2. Maintain all construction equipment in proper working condition and perform all preventative maintenance. Required maintenance includes compliance with all manufacturer's recommendations, proper upkeep and replacement of filters and mufflers, and maintenance of all engine and emissions systems in proper operating condition. Maintenance schedules shall be detailed in an Air Quality Control Plan prior to commencement of construction.

GHG 3. Implement tire inflation program on jobsite to ensure that equipment tires are correctly inflated. Check tire inflation when equipment arrives on-site and every two weeks for equipment that remains on-site. Check vehicles used for hauling materials off-site weekly for correct tire inflation. Procedures for the tire inflation program shall be documented in an Air Quality Management Plan prior to commencement of construction.

GHG 4. Develop a project specific ride share program to encourage carpools, shuttle vans, transit passes for construction worker commutes.

GHG 5. Develop a project specific construction debris recycling and diversion program to achieve a documented 50% diversion of construction waste.

VIII. Hazards and Hazardous Materials

	Potential Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				X
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				X

Environmental Setting

Hazardous materials are defined in Section 66260.20, Title 22 of the California code of Regulations as a substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics may either (1) cause or significantly contribute to an increase in mortality or an increase in serious, irreversible, or incapacitating reversible, illness, or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported, or disposed of or otherwise managed.

In general, lands and shallow waters near the project area have the potential to contain hazardous substances. Petroleum products and pesticides are the most likely materials that may have been stored or released into the surrounding environment. Older gas wells and underground storage tanks used to store petroleum products and other hazardous materials may develop leaks. These leaks can lead to the contamination of soils and groundwater. A query of the California Department of Toxic Substances Control's (DTSC's) database did not reveal any known sites within or immediately surrounding Prospect Island (DTSC 2013).

Discussion

During project construction, the use of potentially hazardous materials would include substances such as gasoline, diesel fuel, motor oil, and hydraulic fluid. Fueling and oiling of construction equipment may be performed daily. DWR standard practices include the implementation of a spill prevention plan and other BMPs during construction activities to avoid or minimize the potential for accidental releases of potentially hazardous materials.

Other potential sources of hazardous substances on the project include contaminated levee materials used in their construction, trash and debris from litter and illegal dumping, herbicides from surficial application upon the levees for weed control, and seepage of contaminated groundwater from exterior sources. Overall, the occurrence of any

hazardous materials within the boundaries of the Prospect Island is not wholly known. There is a debris pile on the northern end of the island, but it will not be impacted by the levee repair work. Additionally, there should not be any hazards to boaters, if any, other than the mooring of the barge during repair activities. There are no known hazardous materials within the project area.

The construction equipment used will use diesel/gasoline fuel and oil. However, these materials will be used, stored and disposed of according to standard protocols for handling of hazardous materials. Hazardous waste management practices are implemented on construction projects that generate waste from the use of known products.

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less than Significant. Impact from diesel/gasoline fuel, oil, and hydraulic fluid used on the project site will be transported to site at the beginning of the project and will not be taken off site until the completion of the project. To minimize any impact to less than significant, staff and contractor(s) will abide by all traffic rules, regulation and comply with all vehicle safety regulations pertaining work time vehicle and equipment usage. Equipment will be checked daily to make sure there are no observable leaks. If leaks are observed, that piece of equipment will be pulled out of service until it repairs are made. The contractor shall have an oil spill kits and booms on site and the public does not have access to the construction site.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less than Significant. Impact from diesel/gasoline fuel, oil, and hydraulic fluid used on the project site; currently the project does not have any known hazardous materials within the project area. The project will not create a significant hazard to people due to a reasonably foreseeable accidental release of hazardous materials. Equipment will be checked daily to make sure there are no observable leaks. If leaks are observed, that piece of equipment will be pulled out of service until it repairs are made.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No impact. There are no schools within one-quarter mile of the project area.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No impact. The project area is not a hazardous site.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

No impact. The project area is not within an airport land use planning area.

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

No impact. The project activities are not located within the vicinity of an airstrip.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No impact. The project will not impair or physically interfere with an adopted emergency response or evacuation plan and construction personnel are required to be trained in emergency response and spill containment.

h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

No impact. The project will not expose people or structures to a significant risk of loss, injury or death due to wildland fires. The Contractor will prepare a fire prevention and control plan and will provide fire extinguishers and other firefighting equipment on site.

Mitigation Measures for Hazardous Materials

HAZ 1. During construction activities, contractor shall prevent oil, grease, fuels, and other petroleum products, toxic chemicals, and any other substances that could be deleterious to aquatic life from contaminating the soil and/or entering waters of the state. The contractor shall immediately remove such substances from any place where they could enter waters of the state and/or adversely affect fish and wildlife resources. The contractor shall attempt to contain any releases or spills of such substances, and shall report any significant spills as soon as possible to the California Emergency Management Agency (Cal-EMA). In the event of a significant spill, work will cease immediately and workers will employ containment methods if it is safe to do so. DWR will make notifications to the appropriate agencies within the regulatory time frames.

HAZ 2. No materials will be staged or stored on the work site in excess of one work day. Stationary equipment such as motors, pumps, generators, compressors, and welders located within or adjacent to a water body shall be positioned over drip-pans.

HAZ 3. All personnel dispensing fuels or servicing vehicles on site will be instructed in the proper use of absorbent materials, spill containment, and waste disposal.

IX. Hydrology and Water Quality

Would the project:	Potential Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?		X		
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?				X
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?		X		
d) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?				X
e) Otherwise substantially degrade water quality?				X
f) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X
g) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				X
h) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				X
i) Inundation by seiche, tsunami, or mudflow?				X

Environmental Setting

The Central Valley Regional Water Quality Control Board (CVRWQCB) has federal- and State-mandated regulatory jurisdiction for control of water quality at Miner Slough. The Water Quality Control (Basin) Plan for the Central Valley (CVRWQCB 2011) outlines water quality standards to be protected. Water quality standards are beneficial uses of water, water quality objectives, and the State anti-degradation policy.

In 2011 the CVRWQCB adopted a Total Maximum Daily Load (TMDL) and Basin Plan Amendment for Monomethylmercury (chemical formula: $[\text{CH}_3\text{Hg}]^+$; abbreviation: MeHg) and total mercury (THg) in the Sacramento-San Joaquin Delta, which is referred to as the Delta Mercury Control Program (DMCP). MeHg is the organic form of mercury most commonly found in the environment. In sufficiently high concentrations in humans and wildlife it causes or contributes to various types of serious illness, developmental and reproductive problems, and mortality.

The hydrodynamics of Miner Slough are affected and controlled by the overall flat topography and geology of the area in combination with characteristic tidal cycles. While the area is tidally influenced, it is well above the X2 salinity gradient point and hence predominated by fresh waters. The depth of Miner Slough at midline next to Prospect Island averages about 13-22 feet. (Tidal action at Rio Vista on the Sacramento River, about 8 miles downstream of Miner Slough, commonly raises water levels three to four feet there [Delta Boating website, 2013].)

Discussion

a) Would the project violate any water quality standards or waste discharge requirements?

Less than Significant with Mitigation. It is possible that the impacts to water quality standards could conceivably occur from:

1. An accidental discharge of diesel fuel, engine oil, or lubricating grease into Waters of the State from mechanized construction equipment.
2. An unanticipated spill of some toxic construction material if any are employed during repair.
3. A temporary and small area-limited increase in turbidity and the amounts of suspended material in the receiving water (Miner Slough) from the discharge of sediment during water-side excavation
4. Erosion of levee soils into Miner Slough for a temporary period during or after construction.
5. The release of slightly warmer water from the inland side of levees into cooler Miner Slough waters.
6. Release of methylmercury, in dissolved or particulate forms, into Miner Slough.
7. The unintended release during levee de-vegetation and construction repairs of tree, shrub, or plant material into Miner Slough.
8. The discharge of water or sediment resulting in slight, temporary, localized decrease in the concentration of dissolved oxygen in Miner Slough water directly adjacent to the levee.

The likelihood and severity of possible impacts to the water quality standards will be reduced to less than significant or eliminated by use of Mitigation Measures and Best Management Practices for Water Quality (below).

In particular, the release of methylmercury currently trapped on-site in soils or sediments or naturally produced during the construction period may potentially occur. But Best Management Practices to control the general discharge of sediment, and curtail increases in turbidity and suspended materials, will also help to reduce the specific release of methylmercury. Such releases are expected to be relatively small, temporary, mitigated by dilution in Miner Slough water, and not a significant impact to water quality standards.

The permits sought from the U.S. Army Corps of Engineers, Regional Board, and Department of Fish and Game may contain additional conditions that further help remove or alleviate potential impacts. DWR will follow conditions of all permits for this project.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?

No Impact. Project activities will not affect groundwater quality, supplies, or recharge. No wells will be drilled, no pumping will occur, and no new facilities will be created that could affect groundwater.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

Less than Significant with Mitigation. It is possible that repair of the existing levee next to Miner Slough, necessitating vegetation removal and excavation and fill, could result in later discharges of exposed soil or plant materials during storm or other high-water events. Such discharges could conceivably violate the turbidity water quality objective and impact beneficial use of water for aquatic organisms in the Slough.

However, such impacts would be reduced to less than significant status by implementation of BMPs, as listed below.

d) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?

No Impact. Because the proposed project will take place on a levee at an uninhabited Delta island, it will not contribute runoff to any storm water drainage system.

e) Otherwise substantially degrade water quality?

No Impact. See answer and elaboration to Possible Impact (a). No additional impacts to water quality are anticipated.

f) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

No Impact. There will be no changes made to existing flood patterns. No new structures or facilities that would impede or redirect flood flows are proposed and none will be erected. The project will not erect or place housing in a flood-prone area. No housing will be erected or moved by the project.

g) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

No Impact. By repairing existing levees the proposed project will reduce the chance of potential flood impacts.

h) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

No impact. The project will repair existing levees and remove the danger of unintended levee breaks. This proposed project is intended to help ensure that the flooding referred to in Possible Impact (d) does not occur.

i) Inundation by seiche, tsunami, or mudflow?

No Impact. The area is flat and located away from the coast and foothills. It is not conceivably subject to inundation by large waves or mud flows.

Mitigation Measures for Water Quality

WQ 1. The rock material used for levee repair shall be clean, sound, hard, angular fragments of rock with no appreciable fines, and shall be free of cracks, seams, or other defects.

WQ 2. Construction BMPs shall be implemented for all phases of the Project to protect against erosion. All exposed soils within the work area shall be stabilized immediately following the completion of earthmoving activities to prevent erosion into the stream channel or wetland/riparian areas.

WQ 3. Equipment will be inspected daily prior to use for leaks and greases. All leaking equipment will be repaired prior to use. Workers will be trained in the proper use of absorbent materials, spill containment, and waste disposal.

WQ 4. To minimize impacts from water runoff, erosion and other potential water quality impacts, best management practices will be employed as described in an approved SWPPP for this project.

X. Land Use and Planning

Would the project:	Potential Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Physically divide an established community?				X
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				X
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?				X

Environmental Setting

The project area is located in the eastern portion of Solano County, which is unincorporated. It is an area that is zoned for agriculture and is sparsely populated. Prospect Island is fallow land and not in use at this time and is designated as “other land” by California Department of Conservation (CDOC). The project is in the Ryer Island Agricultural Region, which has a minimum lot size of 80 acres to provide for agricultural production. Land use in the surrounding area is primarily agriculture including orchards and row crops with several agricultural structures and single family residences.

Discussion

a) Physically divide an established community?

No Impact. The project activities do not have the potential to divide an established community.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact. The project activities will not conflict with any applicable land use plan, policy, or regulation.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact. The levee repair project is within the plan area for the Solano Multispecies Habitat Conservation Plan but the project activities will not conflict with the plan.

XI. Mineral Resources

	Potential Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X

Environmental Setting

Mineral resources mined or produced within Solano County include mercury, sand, gravel, clay, stone products, calcium, and sulfur. None of these resources are mined or produced in the project area. There are no active mines or mineral processing facilities and no recorded past mine locations in the project area. There are no Mineral resource zones (MRZ) within the project vicinity.

Discussion

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No impact. Recent levee explorations on Prospect Island by DWR encountered little to no peat soils. However, there is a potential that the proposed repair excavations may encounter peat soils, which occur throughout the Sacramento-San Joaquin Delta. Peat soils have historically been mined in the Frank's Tract area of the Delta (USGS 2013). There is no mining of peat soils occurring near the proposed levee repair sites, based on a review of the U.S. Geological Survey's (USGS) Mineral Resource Data System (USGS 2013). The project will not result in the loss of any known or locally-important mineral resource or recovery site.

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No impact. See paragraph above under a).

XII. Noise

	Potential Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?				X
b) Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?				X
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				X
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?				X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels?				X
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				X

Environmental Setting

Noise- and vibration-sensitive land uses generally include those uses where exposure would result in adverse effects (e.g., sleep disturbance, annoyance), as well as uses where quiet is an essential element of their intended purpose. Residences are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Other sensitive land uses include hospitals, convalescent facilities, parks, hotels, churches, libraries, and other uses where low interior noise levels are essential.

The project area is an isolated agricultural area, with the nearest receptor across the slough on SR 84 and north of the project site at Arrowhead Harbor. There are no sensitive receptors in close proximity to the project. SR 84 parallels Miner Slough along the eastern side and conveys agricultural equipment and transport from West Sacramento to Rio Vista and SR 12.

Discussion

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

No Impact. The project does not have the potential to generate noise levels in excess of established standards. Furthermore, there are few residences or businesses in the project area. The only known residences or commercial businesses within the area include two homes and agricultural operations east of Miner Slough opposite SR 84 and Arrowhead Marina at the north end of Miner Slough.

b) Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?

No Impact. The project does not have the potential to generate excessive ground-borne vibration or noise levels.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

No Impact. The project will not create a permanent increase in ambient noise levels. The project is short-term in duration.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

No Impact. The project will increase ambient noise levels in the project vicinity for a short duration, but noise levels will not be in excess of established standards.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels?

No Impact. There are no nearby airports. The closest known municipal airport is approximately 5 mi from the project location.

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. There are no known private airstrips nearby.

XIII. Population/Housing

	Potential Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X

Environmental Setting

The project area is located in the eastern portion of Solano County, which is unincorporated. It is an area that is zoned for agriculture and is sparsely populated. The project is in the Ryer Island Agricultural Region, which has a minimum lot size of 80 acres to provide for agricultural production. There are few residences within the project vicinity.

Discussion

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact. The proposed project activities will not induce population growth or displace housing or people. Approximately 10 construction workers would be required to construct the Project over a 3-month period. Given the small number of workers involved and the brief construction schedule, these workers would readily be available from the local population, and no influx of workers would be required. No residences would be constructed as part of this Project, nor would infrastructure be extended into an area where it did not already exist.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact. The project does not have the potential to displace housing.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. The project activities will not displace any people.

XIV. Public Services

	Potential Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?			X	
Police protection?			X	
Schools?			X	
Parks?			X	
Other public facilities?			X	

Environmental Setting

Public services for the project area are under the jurisdiction of the Solano County Sheriff’s Department and the River Delta Fire District. There are no schools, parks, or other public facilities in the vicinity of the project. No federal or state regulations are applicable to police or fire protection in the project area

Discussion

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services included above?

Less than Significant. The proposed project activities will not result in impacts which would require new or additional fire protection, police protection, schools, parks or other public services. The Project could result in increased demand for fire and police services during construction and operations in the event of accidents requiring emergency response. Such a demand is typical of all construction activities and would be within the capabilities of the local and regional emergency response providers.

XV. Recreation

	Potential Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				X

Environmental Setting

The greater Sacramento-San Joaquin Delta is a maze of channels and islands at the confluence of the Sacramento and San Joaquin rivers, including Miner Slough. The only developed recreation facility near the project site is the Arrowhead Harbor marina, located on Miner Slough about 4 miles from the Sacramento River Deep Water Ship Channel. Arrowhead Harbor offers its customers long-term berthing, dock services, RV camping, and boat launching. This marina is located on the bank of Miner Slough opposite Prospect Island and about 2,000 feet north of the edge of project site, so project activities will not directly interfere with marina operations or public use of that private facility.

The public recreation area nearest to the project site is the Miner Slough Wildlife Area (MSWA) owned by CDFW. This CDFW Wildlife Area is situated about 1 mile away from the southern end of the project site. Located at the confluence of Miner Slough and Cache Slough, the MSWA is accessible only by boat and includes riparian vegetation that supports shorebirds, waterfowl, raptors, and beavers. Bird watching, wildlife viewing, and fishing are allowed and hunting for waterfowl is allowed during open season (no rifles or handguns allowed). There are no recreation facilities in the MSWA and no permits, passes, or reservations are required there.

Discussion

The levee repair project will be completed from both on-water access (via barge and dragline) and from the top of the levee (via truck and heavy equipment). Since the in-water activities are almost a half-mile from the nearest developed or designated recreation site, the project is not expected to interfere with access to nearby recreational lands or facilities. However, because of the nominal width of Miner Slough, the anchoring of a barge to deliver project materials may result in temporary alteration of recreational navigation on Miner Slough during construction.

Although boats would be temporarily unable to use the side of the waterway where barge-supported construction was occurring, Miner Slough in the vicinity of the levee repair sites would remain open to boat passage at all times. The waterway is approximately 150 feet wide throughout the project construction zone. Since the construction barges are expected to be about 30 feet wide and anchored about 20 feet from the toe of the levee, at least half or more of this channel width would remain open to boat passage, providing ample room for the boat traffic observed to occur in the area to pass without difficulty and minimizing any possible traffic congestion.

Temporary in-water construction zone restrictions would include a speed-restricted zone extending upstream and downstream of construction within Miner Slough to reduce wake and maintain a safe work area in the vicinity of the construction activities. The extent of the speed-restricted zone would be at least 1,000 feet upstream and downstream of the active worksite. Within the speed-restricted zones around the construction/repair areas, high-speed recreation opportunities (such as for waterskiing, wakeboarding, and tubing) would effectively be eliminated.

Direct adverse effects on boat passage and navigation on Miner Slough would result from project construction but will be temporary. Effects include obstruction and delays to boat passage and navigation as a result of channel obstructions to compliance with temporary speed zones. However, boat passage volume along Miner Slough is low. Water-based recreational activities such as water skiing, wakeboarding, tubing or fishing are also low. In addition, there is sufficient width in the channel to allow boat passage, with minor delays related to construction speed zones. Implementation of measures for recreation and navigation safety would reduce these effects. Because the on-water portion of the

construction period (and the resulting need for boat speed restrictions) is only expected to be about 30 days, these effects are considered less than significant.

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact. The project does not include aspects that will increase existing or create new recreational activity or use of any type, and thus will not result in additional use or impact upon existing facilities.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact. The project does not include recreational facilities or require the construction or expansion of recreational facilities.

XVI. Transportation/Traffic

Would the project:	Potential Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, mass transit?				X
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads/highways?				X
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				X
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
e) Result in inadequate emergency access?				X
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease performance or safety of facilities?				X
g) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?				X

Environmental Setting

The project area is an isolated area with a single lane, private dirt levee road that surrounds Prospect Island. The Miner Slough levee is accessed from Holland Road off SR 84. SR 84 is a minor arterial road serving local traffic and operating at Level of Service (LOS) B. Caltrans defines LOS B as roads with traffic speeds at or near free-flow speed, but presence of other users begins to be noticeable (Caltrans 2010). Agriculture is the dominant land use activity near SR 84. The Sacramento River and Miner Slough are primarily used by recreational boats.

Discussion

The levee repairs for Miner Slough will require an excavator, commercial chipper and support vehicles. The excavator and other equipment will be hauled to and left on site until the end of the project or as needed. Fewer than ten vehicles a day will access the site to bring staff or additional equipment.

A barge (approximately 30 feet wide) will be used to haul rock slope protection to the site and construction staging will be conducted from a barge. The barge will be brought to the site by a tug boat. Miner Slough is at least 150 feet wide, which is wide enough to allow boat traffic to pass when the barge is moored. The barge will be positioned where they can be easily viewed by oncoming watercraft and away from the main flow of traffic, whenever possible. The anchored barge(s) will be well-marked and positioned so as not to pose a hazard to, nor significantly impede navigation of, commercial or recreational navigation.

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

No impact. Miner Slough Levee is in a remote part of the Sacramento-San Joaquin Delta east of Prospect Island. Access to Miner Slough levee is through private property that has locked gates and is not accessible to the general public. The project will not conflict with any applicable plans, ordinances or policy establishment performance of circulation systems.

b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

No Impact. The project will not conflict with any congestion management plans.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?

No Impact. The repair sites are more than 4 miles from the closest airport and will not result in a change to air traffic patterns.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact. Access to Miner Slough levee road is restricted. The levee repairs will improve the area of repair site and the crown of the levee road and will not change the alignment of the levee road.

e) Result in inadequate emergency access?

No Impact. Access to Miner Slough levee is restricted. To access Prospect Island/Miner Slough levee, access crosses private land through a locked gate. The project does not have the capacity to change emergency access nor will it interfere with emergency access during construction activities.

f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

No Impact. The project will not conflict with any adopted policies, plans or programs for transportation.

g) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

No Impact. The project will not conflict with any plan, ordinance, or policy for transportation.

Mitigation Measures for Transportation

TRAF 1. All U.S. Coast Guard lighting requirements will be followed (CCR Title 33 §88.13). The barge must display warnings for underwater anchors so that other boaters are aware of the potential danger beneath the water in compliance with U.S. Coast Guard regulations. The anchored barge(s) will be well-marked and positioned so as not to pose a hazard to, nor significantly impede navigation of, commercial or recreational navigation.

TRAF 2. If emergency assistance is required during construction, staff will be dispatched to meet emergency vehicles at the gate and will escort the emergency vehicles to the accident site.

XVII. Utilities and Service Systems

	Potential Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Exceed wastewater treatment requirements of applicable RWQCB?				X
b) Require or result in construction of new water or wastewater treatment facilities or expansion of existing facilities, which could cause significant environmental effects?				X
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, which could cause significant environmental effects?				X
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				X
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the projects projected demand in addition to providers existing commitments?				X
f) Be served by a landfill with sufficient permitted capacity to accommodate the projects solid waste disposal needs?				X
g) Comply with federal, State, and local statutes and regulations related to solid waste?				X

Environmental Setting

The project is located along Prospect Island in a remote part of the county and there are no utility or service systems for the project site.

Discussion

There will be no change in utility or service systems.

a) Exceed wastewater treatment requirements of applicable RWQCB?

No Impact. The project will not generate any wastewater and therefore will not require new or affect existing wastewater treatment requirements.

b) Require or result in construction of new water or wastewater treatment facilities or expansion of existing facilities, which could cause significant environmental effects?

No Impact. The project will not require construction of new water or wastewater treatment facilities or expansion of existing facilities.

c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, which could cause significant environmental effects?

No Impact. The project will not require the construction of new stormwater drainage facilities or expansion of existing facilities.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

No Impact. The project will not change existing water supplies available.

e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the projects projected demand in addition to providers existing commitments?

No Impact. The project will not result in a determination by the wastewater treatment provider for inadequate capacity.

f) Be served by a landfill with sufficient permitted capacity to accommodate the projects solid waste disposal needs?

No Impact. The project will not be served by a landfill.

g) Comply with federal, State, and local statutes and regulations related to solid waste?

No Impact. All solid waste will be contained in drums or bins and disposed of at an appropriate landfill in accordance with federal, State, and local statutes, and regulations. See section on Hazardous Materials (page 71) of this Initial Study for more information.

XVIII. Mandatory Findings of Significance

	Potential Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		X		
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?			X	
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?				X

Discussion

This Initial Study was prepared to assess the proposed activity's potential effects on the environment and significance of those effects. Based on the Initial Study, it has been determined that the proposed project would not have any significant environmental effects and will have less-than-significant cumulative impacts. The potential, short-term adverse environmental effects related to construction activities would be minimized or avoided through the implementation of environmental commitments that have been incorporated into the project description.

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Less than Significant with Mitigation. The project does have the potential to degrade the quality of the environment, but will not substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number of or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory. Mitigation measures have been proposed to reduce impacts to less-than-significant levels and are described in full detail starting on page MND-3 and after each resource discussion.

Wetland and riparian habitats are found near the project sites and special status species may be found within the project area, but no special status species will likely be significantly impacted during project construction activities due to seasonal constraints on the project (i.e., project activities will take place outside of the active season for most species; with the exception of Giant Gartersnake where activities will take place during the active season in order for snakes to avoid construction activities). Mitigation measures will be implemented to bring environmental impacts of the proposed activities to less-than-significant levels within the project area. Specifically, potential impacts to biological resources, cultural, hydrology/water quality will be mitigated to less-than-significant levels.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

Less than Significant. As discussed in the analysis provide in this Initial Study, the environmental commitments that are incorporated into the project maintain all potential impacts on resources at a less-than-significant level. The proposed project would not result in cumulatively considerable impacts.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

No Impact. The proposed project would not result in substantial adverse effects on human beings.

Chapter 4 – Document Preparation

This document was prepared by several individuals with experience in various disciplines. The following people assisted in the preparation of this document.

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